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SPRINGTIME FOR SUN: NETBEANS 4.1, CREATOR 2.0

BY YVONNE L. LEE

In the first half of 2005, Sun plans to spring forth with new versions of its NetBeans IDE and Java Studio Creator tool for creating department-level applications.

Sun released an early access version of the NetBeans 4.1 IDE and the general access version of NetBeans 4.0 last week.

NetBeans 4.1 is scheduled for April release, and for the first time, will enable developers to create, as well as consume, Enterprise JavaBeans.

Sun will expand on the visual editing capabilities added to NetBeans 4.0. These capabilities are based on Sun Labs' Jackpot project, which James Gosling oversees. In addition to providing a more visually rich development environment, Jackpot's goals are to provide metrics about the code and analysis of code properties.

An updated performance profiler also will be included, enabling memory profiling and leak detection, CPU perfor-

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Business Processes Tie Applications to Goals

Systems management solutions vendors queue up under banner of SOA

BY DAVID RUBINSTEIN

Business process management took center stage late last year with four vendors announcing new strategies and products to help organizations create and implement applications to run in service-oriented architectures.

BPM, according to research firm Meta Group, is evolving into a primary vehicle for transitioning existing application portfolios to Web services and SOAs. This is being seen as traditional modeling companies begin to add process management to their tools, with the goal of letting them build on

distributed enterprise application integration efforts.

For example, a newly announced integration between Popkin Software's System Architect modeling suite and Oracle's BPEL Process Manager "is not

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SOA, BPM and Martha Stewart

BY ALAN ZEICHICK

The presidential elections and the war in Iraq: Those were the top stories in much of the world during the past year. In the United States, other issues came to the fore: The Red Sox won the World Series, while Martha Stewart went to prison

and Google completed its initial public stock offering.

For software developers, the top news trends were less traumatic. Thanks to an improving economy, no major development or platform company went out of business. The year

saw few start-ups or mergers; the noteworthy exception was the

soap-opera hostile takeover of PeopleSoft by Oracle. The SCO v. Linux legal challenges

grind on, with a seemingly endless series of delays; Microsoft settled many of its outstanding lawsuits, with the most famous against Sun culminating in a handshake between Steve Ballmer and Scott McNealy.

Development managers also digested a number of newly pop-

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Oracle Puts Integration At Its Core

BY YVONNE L. LEE

SAN FRANCISCO — At the Oracle Open World conference in December, Oracle announced Oracle 10g Release 2, a set of updates that will enable its products to build applications that integrate with other applications.

The enhanced products are scheduled to ship in the first half of 2005.

Central to the release is an upgrade to the database itself. Oracle 10g Database Release 2 includes performance enhancements, as well as improvements to availability and manageability. It will include a new way to display the data so that it can be managed.

APPLICATION SERVER

According to Rick Schultz, vice president of marketing for application server and develop-

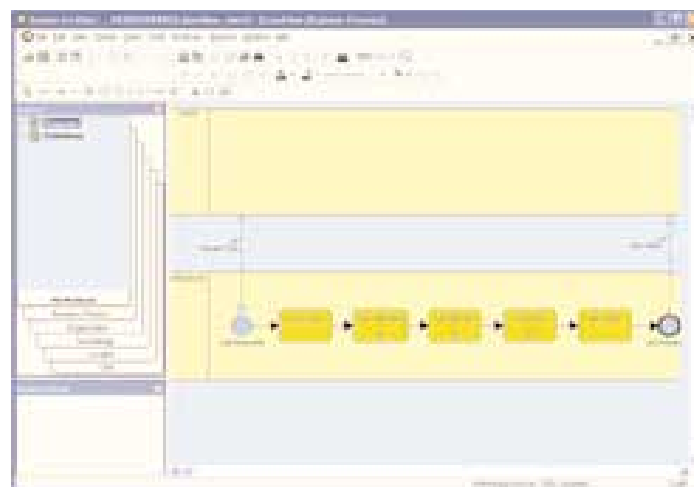
er tools, Oracle 10g Application Server Release 2 has more than 500 new features—almost as many as the original 10g release had a year ago.

Oracle has added features that focus on integration, using Business Process Execution Manager and also through traditional integration methods, said Schultz. Traditional tools tie specific applications together, but although using BPEL requires the applications to be translated as Web services, it enables the applications to become modular so that they will communicate with any Web service.

"Integration is our fastest-growing area," he said. "[Companies'] new spend is integration, and they like our offering."

The product is designed to facilitate electronic trade

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Workflow created in Popkin's System Architect can run on Oracle's platform.

THE YEAR IN REVIEW

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RUBINSTEIN:
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Open Source Dominates Java Landscape

Top application server and development environment are free, says study

BY YVONNE L. LEE

Both the chief application server and main development environment in organizations using Java are open-source projects, according to a recent BZ Research survey.

BZ Research is a subsidiary of SD Times' parent company, BZ Media. This study of 759 SD Times subscribers was conducted in November 2004.

Java continues to be deployed in more and more real-world situations. Almost two-thirds of respondents (64.9 percent) said they were using Java in production systems in 2004, compared

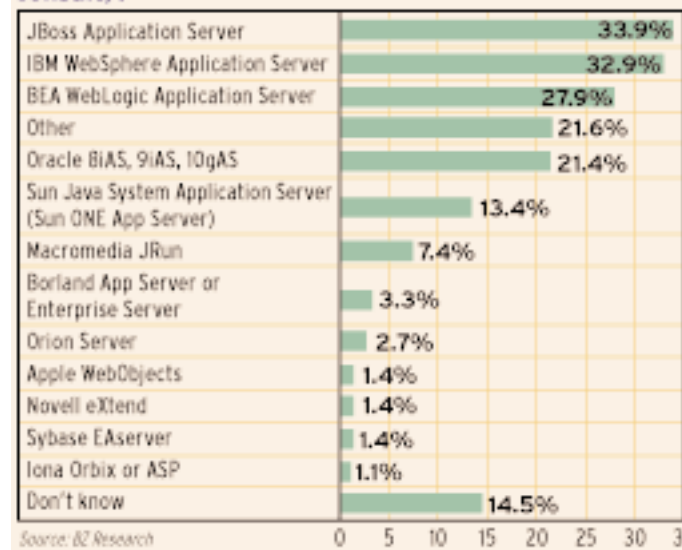
with 55 percent the year before.

In 2003, most respondents said they deployed Java applications on IBM's WebSphere (40 percent), BEA's WebLogic (35 percent) and Oracle's application servers (29 percent), with JBoss' application server coming in fourth with 27 percent. Respondents could answer that they used multiple products. This year, JBoss leapt ahead of the commercial servers, with 33.9 percent of respondents saying they had deployed applications on that platform. Not only did more respondents say they were using JBoss, but fewer said they

were using the top three closed-source commercial application servers. IBM fell into second with 32.9 percent; BEA was third with 27.9 percent, and Oracle fourth with 21.4 percent. However, the miscellaneous "other" category, with 21.6 percent, had not only a higher percentage of respondents than the Oracle application servers, but more than the next two application servers, Sun's Java System application server (13.4 percent) and Macromedia JRun (7.4 percent), combined.

An open-source tool also leapfrogged commercial development environments this year. The newly independent Eclipse platform rocketed from 35 percent last year to 55.3 percent this year. The former leader, Borland's JBuilder, slipped from being used by 37 percent of corporate developers in 2003 to only 23.4 percent this year. IBM's WebSphere Studio Application Developer, which is based on Eclipse, was used by a little more than 21 percent of enter-

Which Java application servers are currently in use at your company (or at the companies to whom you consult)?

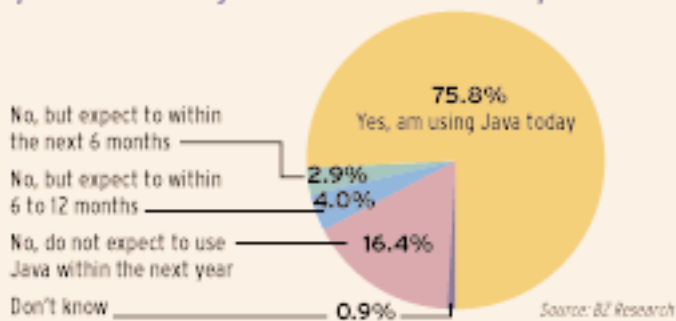


prise developers this year, compared with a quarter of respondents last year. Sun's NetBeans picked up considerable ground. This year, 17.9 percent of enterprise developers said they used the platform, while only 13 percent used it the prior year.

In a new question this year, respondents were asked what they were integrating with their Java applications. More than half (52 percent) said they were integrating them with other Java apps. But Java was not restricted

to other Java apps or to Unix-related operating systems. Twenty-eight percent said they were connecting to legacy Windows applications, and just over 21 percent (21.2) said they were connecting to Microsoft's .NET Framework. More than 27 percent (27.5), said they were integrating Java apps with non-Java apps on Unix or Linux. And 24.3 percent of the survey respondents said they were using Java to connect with mainframe and midrange applications. ■

Are you, your company or the companies to whom you consult using Java for software development?



Java Year Focused on Tools

BY YVONNE L. LEE

It was a year for tools, and nothing eclipsed the open-source platform underlying IBM's WebSphere application development and deployment platform.

In February, Big Blue liberated the platform by turning it over to a separate nonprofit corporation with five membership levels. The new Eclipse Foundation would no longer be led by an IBM employee, nor by an employee of the other strategic developers, Intel and QNX. In June, it named Oracle's former vice president Mike Milinovich as executive director.

Having opened the foundation for its platform, IBM used the political capital it earned to demand that Sun open up Java itself. By year's end, Sun had partially acquiesced, making the source code to the J2SE 6.0 libraries available for noncommercial use.

Eclipse itself received an upgrade, featuring a user interface that can manage more than 100 plug-ins. As a result, many

smaller application vendors that build stand-alone applications, from testing tools to interface designers to full-fledged development environments, converted these to become Eclipse plug-ins.

Sun attempted to create its own star with the Java Tools Community, but it was a white dwarf compared to the Eclipse red giant. The group did not lay out a road map for its efforts, but said it intended to work with toolmakers and customers to make the Java platform easier for creating tools; it dubbed this capability "toolability." It would take these efforts to the Java Community Process.

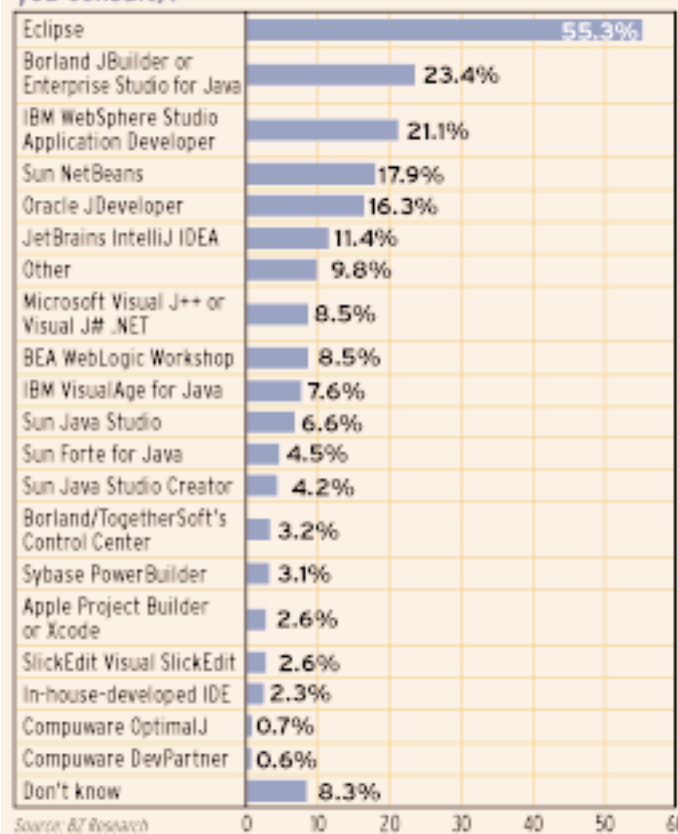
While Sun's JTC did not shine, the Java owner did make progress with some of its own tools. In April, the company released a renamed version of its tools. In addition, it released a new tool called Java Studio Creator intended for business programmers not as experienced with the intricacies of Java development.

Hearing the same drumbeat of simplicity, Oracle released a version of JDeveloper with a graphical interface that the company claimed even nonprogrammers could use.

For its part, BEA tried to advance its tools platform by giving portions of it away. The company in January released a toolkit to help port Page Flows to other application servers and submitted its XML Beans to Apache. In June, it followed up by launching what it called Project Beehive, an application framework that sits between the WebLogic application server and the application itself. So far, the server will work with the Apache Tomcat container and is scheduled to work with the Apache Geronimo server, but does not work with other application servers.

However, one significant project, called Pollinate, will enable the Beehive framework to work with the Eclipse framework. That way, developers would be able to use Eclipse tools to build applications that run on the WebLogic server. ■

Which Java development environments are currently in use at your company (or at the companies to whom you consult)?



BEA, IBM Choose BPELJ for Integration

BY YVONNE L. LEE

When it comes to Web services integration, Java application vendors have elected to go the way of diversity.

BEA and IBM will use a language called BPELJ, which the two companies have been co-developing since March 2004, while JBoss, Novell, Oracle, Sun, Sybase and 17 other companies released a public version of a Java specification, JBI, which they have been working on since March 2003. JBI also is known as JSR 208.

While BPEL itself orchestrates the interactions among Web services, these other two efforts seek to provide an intermediate translation layer that makes other applications appear to be Web services so that they, too, can be orchestrated in these chained transactions. BPELJ does this as an alternate scripting language, and JBI does this by defining a new standardized

architecture for plugging components into the Java platform. BPEL engines could be one of many components that would be plugged into that architecture.

BEA was part of JSR 208's initial expert group, but it pulled out just prior to the specification's public unveiling. At that

time, both BEA and IBM cited their work with BPEL in formal statements about why they were not participating in the JSR 208 expert group, but according to Rob Cheng, product marketing director for application server and tools at Oracle, BPEL is not designed to be used

for integration. Oracle is on OASIS' WSBPEL technical committee and is part of the expert group for JSR 208.

"Basically, BPEL allows you to present application components that aren't Web services with a Web services interface," he said.

"BPEL is intended primarily

for Web services orchestration," said Steve Hood, BEA's product manager for business process management. "[Other efforts] failed to achieve critical mass because they tried to boil the ocean. BPEL solves the orchestration problem, but it assumes that everything's a Web service."

Integration ties together

applications and data that are not necessarily Web services.

Because BPEL requires everything it interacts with to be a Web service, it needs an intermediate translation layer, said Cheng.

"If you didn't have something like a JSR 208, you would have to take the other legacy

assets and write your own wrappers," he said.

BPELJ enables Java and BPEL to work together by allowing Java snippets to be included in BPEL process definitions.

IBM declined to elaborate on its BPEL plans beyond the statement issued at the time JSR 208 was released. ■

VARIATIONS ON BPEL

• **BPEL** - Business Process Execution Language: a specification for orchestrating Web services

• **WS-BPEL4WS** - BPEL's name once it was accepted by an OASIS working group

• **BPELJ** - BEA and IBM instructions for working with BPEL in Java

Web Services, Minus Programming Excel users invoke data—without being 'WSDL-aware'

BY JENNIFER DEJONG

A new offering from StrikeIron is expected to let Excel users import live data into their worksheets, without help from professional developers.

The Research Triangle, N.C.-based company announced last month the beta version of OnDemand Web Services for Excel (www.strikeiron.com/htmls/ondemand.aspx). Expected the first quarter of next year, OnDemand will let Microsoft Excel users add real-time data, such as stock quotes, to a spreadsheet, without having to understand

what's involved in invoking a Web service, said StrikeIron's chief marketing officer, James Neiser.

For example, to add stock market data to a spreadsheet, users search on the term "stock," and OnDemand will prompt them through the process of selecting the appropriate Web service, allowing them to specify, for example, which companies' data they want to embed in which cells of their spreadsheet, said Neiser. They can then perform any Excel calculation or function on that data.

A plug-in for Excel, which also requires the .NET Framework, OnDemand works by searching StrikeIron's Web Services Business Network, a subscription-based directory of more than 1,000 Web services, and invoking the selected Web service in the background. Linking to services not listed in that directory requires the user to enter the Web Services Description Language (WSDL) location. OnDemand, for which pricing has not yet been determined, is designed for users who aren't "WSDL-aware," Neiser said. ■

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Zope 3 Loses Inheritance

Open-source app server unifies APIs to ease development

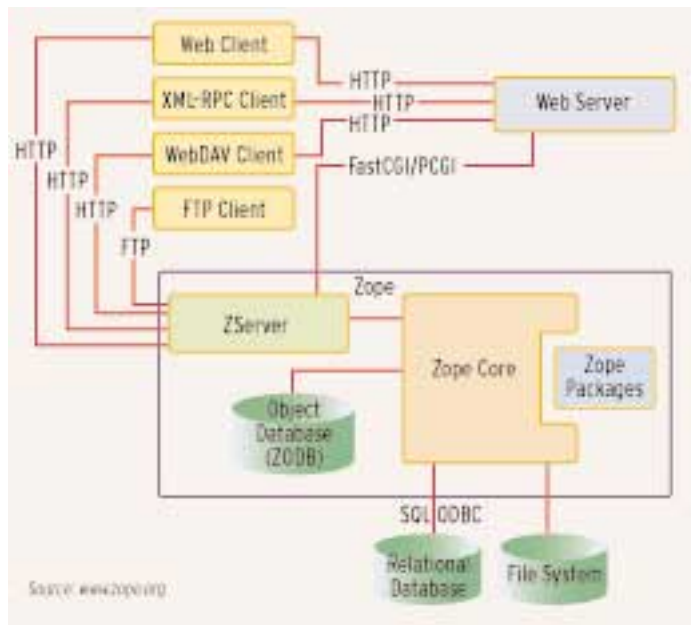
BY EDWARD J. CORREIA

If something works, don't stick with it—rebuild it from scratch.

Such was the philosophy behind Zope 3, a ground-up rewrite of the open-source application server released in November that, according to its core developer, relies less on object inheritance than Zope 2, thereby simplifying development and code reuse.

"Zope 2 gained all its power through inheritance," said Stephan Richter, Zope's core developer and release manager. But as features were added to Zope, written in Python, project developers began to discover limitations in the multiple inheritance structure of that open-source language, Richter said. "Your objects become bigger and bigger—you could have an object inheriting from 30 other objects—and it makes it difficult to make things work. We found that this wasn't a good model for a framework."

Zope 3 replaces inheritance



The extensible Zope core has a Web ORB, search engine and security layer.

with communication through interfaces, which Richter said greatly simplifies development by reducing the number of framework APIs a developer has to know to be productive.

"Before, a developer would have

to know the management interface, how persistence worked [for example], and had to implement the APIs for all of these things. Now, instead of knowing all the APIs of the inherited objects, he now just has to know

the interface of the components he wants to change," he said, adding that Python applications that use inheritance will still run within the framework.

Richter said that Zope, an acronym for Z-Object Publishing Environment, is akin to JBoss. "Zope does for Python what JBoss does for Java," he said, adding that text, files, Web pages, addresses and other types of content are stored in a database as objects. "You create templates like with XSLT, render these objects as pages and give them functionality."

A de-emphasis on inheritance, Richter said, also benefits developers with easier code reuse. He illustrated with a hypothetical news site, which renders articles in HTML. "Let's say you want to add an RDF format. In Zope 2 you would write a separate method to convert it to RDF," and store that method inside the article object. "In Zope 3, the code is not stored inside the object.

The news article is only responsible for its data, and the RDF presentation component is only presenting the article data as an RDF" and can be reused by other articles, he said.

FORM MACHINERY

Zope 3 also automates Web form generation and data validation. "The most annoying thing about writing Web pages is writing HTML forms and worrying about how to convert and store the data," he said.

According to Richter, developers can now write interfaces as schema that enable Zope 3's new form machinery not only to automatically generate HTML forms, but also to validate and convert the input. "Just because someone types a string in an HTML form doesn't mean you want to store it as a string." A number, for example, might need to be converted to an integer. "All this is done automatically and checked whether it's a valid entry."

A word of warning: Zope 3 is not backward compatible with Zope 2. However, Richter said an available wrapper for Zope 2 applications can be used as a migration path. ■

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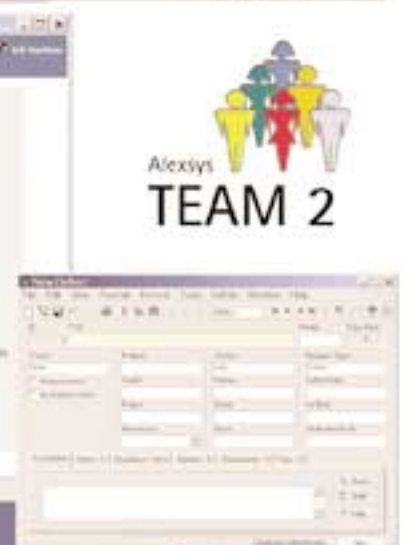
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News Briefs

NEW PRODUCTS

BEA has revamped its **dev2dev** developer Web site; new features include CodeShare, a collaborative environment based on CollabNet Enterprise Edition, and technical reference material from O'Reilly Media . . . IntelliCorp has launched **LiveInterface** for SAP, a NetWeaver-compliant IDE for the enterprise resource planning system. The company says the new IDE is designed to help with data integration projects . . . Telelogic has announced an Eclipse plug-in that lets its **Synergy/CM** change management system work with the open-source IDE. There is also a new dashboard for Synergy/CM that provides visual key status indicators to help developers and managers monitor project progress against business objectives . . . Canoo Engineering has released an Eclipse 3.0 plug-in for its **UltraLightClient** Java library that simplifies the development of rich Internet client applications. The company is building a separate Eclipse-based visual editor for ULC . . . Haley Systems is offering **HaleyRules for Java Platforms**, a business rules inferencing engine for Java. Rules can be built using either plain English or CLIPS, the company's rules language. The company has versions of HaleyRules for C++ and .NET . . . TimeSys is offering two new Eclipse 3.0-based embedded development tools: **TimeStorm Linux Development Suite** and **TimeStorm Linux Verification Suite**. LDS includes an IDE, compiler, debugger and project management tools. LVS is a testing system that also includes an IDE . . . ComponentOne has announced **DevKit for Borland Delphi 2005**, a product suite that combines the Delphi IDE and ComponentOne's entire set of components for .NET, ASP.NET, mobile devices and COM. Prices range from US\$1,199 to \$2,999, depending on which version of Delphi is included in the bundle . . . Also for Delphi, FeatherlySoft is offering **Delphi SWF SDK**, which is an Object Pascal library for creating Macromedia Flash files without using an external application. The SDK costs US\$170 . . . Compuware has released **Program Analyzer**, a new tool for understanding the architecture and functionality of mainframe COBOL programs. The tool is designed to work with the company's Abend-AID, Xpediter/CICS and Strobe mainframe systems management applications . . . SmartDB has announced **PS20**, a toolkit for helping migrate ERP data from PeopleSoft to Oracle. The software is expected to be available mid-January . . . DataSource is now shipping **Jetson 1.0**, a tool set for automating the development and deployment of J2EE 1.3 applications. Jetson focuses on EJB-based development, and exposes business components as Web services. Pricing ranges from US\$999 to \$3,499, depending on the number of database and app servers supported.



UPGRADES

Macrovision has upgraded **InstallShield**, an authoring system that it purchased in June 2004. Version 10.5 includes "trialware" features for offering time-limited evaluation of applications; support for Microsoft's MSI 3.0 installer system's new features, such as Patch Sequencing; automatic updating of XML file settings on target machines; and the ability to share and reuse common elements between multiple installation projects . . . Version 2.5 of **Coherence**, a distributed Java data caching and data management system from Tangosol, adds a JAAS-compliant security module. Tangosol has tested and certified the Coherence 2.5 release on all IBM platforms, including zSeries mainframes. The company plans to support Solaris 10 in early 2005. Pricing begins at US\$1,995 . . . The latest version of PathScale's **EKOPath Compiler Suite** for 32-bit and 64-bit x86 processors now supports OpenMP, includes AMD's Core Math Library for AMD64, and works with Intel's EM64T architecture. It also includes a new serial debugger for Fortran 77/95 and C/C++. Annual licenses are US\$595 for C/C++, \$1,095 for Fortran or \$1,495 for both . . . Connx Solutions has updated its namesake data access integration software. **Connx 9.0** includes a new .NET data provider, new



Annual licenses are US\$595 for C/C++, \$1,095 for Fortran or \$1,495 for both . . . Connx Solutions has updated its namesake data access integration software. **Connx 9.0** includes a new .NET data provider, new

location of field sales people, enabling developers to add that information to existing applications. And in August, Microsoft updated Host Integration Server, easing the process of getting .NET applications to access data stored on mid-range and mainframe systems.

For Microsoft, Delayed Products, More Visions of the Future

BY JENNIFER DEJONG

In the world of .NET development, it was a year of slipped delivery dates and future promises.

Microsoft didn't deliver the long-awaited Whidbey, Yukon or the Longhorn beta promised for 2004. But it did spell out plans to extend the Visual Studio product line, adding a high-end edition, Team System, expected to include Microsoft's own modeling, testing and change management tools, as well as a stripped-down Express edition, addressing a long-standing criticism that its tools had become too bloated.

It wasn't all product delays and future visions, though. Microsoft delivered four servers in 2004. In March, it launched a new version of its integration server, BizTalk, which supports Business Process Execution Language (BPEL) and works within Visual Studio; Speech Server, a new member of the Windows System Server family for creating voice-enabled applications, such as those for customer self-service; and MapPoint Location Server, which can pinpoint, for example, the exact

location of field sales people, enabling developers to add that information to existing applications. And in August, Microsoft updated Host Integration Server, easing the process of getting .NET applications to access data stored on mid-range and mainframe systems.

WAITING AND MORE WAITING

When Microsoft announced delays of Whidbey (the next version of Visual Studio) and Yukon (the next iteration of SQL Server), the latter was clearly more serious. While the two are tied at the hip, the delay of Visual Studio is likely to have little impact on developers. But the long wait for the .NET-enabled version of SQL Server could slow the adoption of Microsoft's development platform. What's more, it put the company in last place behind its database rivals IBM and Oracle. Both have continued to update their enterprise offerings, but Microsoft has not done so since 2000.

News that Longhorn (the successor to Windows XP) was late dribbled out slowly. In April, the company said the beta

wouldn't be ready until 2005, but did not acknowledge until summer that the date for the production version had slipped until 2006. Worse still, it would not include WinFS, the XML-based storage system previously promised. There was more bad news last summer: Windows Server 2003 for 64-bit Extended Systems and Windows Server 2003 SP1 were delayed until the first half of 2005.

On the plus side, 2004 was a year of Microsoft's "playing well with others." It made amends with Sun and Novell. The company carefully positioned its forthcoming life-cycle development offering, Team System, not as an all-Microsoft environment, but one in which developers could plug in their preferred tools, including those of rivals. And it tactfully described its planned modeling tools as "UML and more," not wanting to deviate drastically from the industry-standard modeling language.

Nonetheless, it lags behind rival IBM, which has already delivered Atlantic, its own life-cycle development platform. ■



Not a Lot of Fruits of Their Labor

Sun, Microsoft work on Web services, interoperability

BY YVONNE L. LEE

If the items illustrating progress in Microsoft and Sun's eight-month relationship had been clothing, the announcement last month of the work the two have collaborated on would have been X-rated.

The two companies held a teleconference, each praising the other's corporate culture and the relationship, but the actual software results are modest by the companies' own admission.

"We have two immediate goals," said Greg Papadopoulos, Sun's chief technology officer. "First is that we're working on Web service specifications. These really help future products out of the box be interoperable. Second, we are exploring sort of the basic, common-sense approaches that let the existing product sets that we have work well together and give our cus-



Sun's Scott McNealy, left, and Microsoft's Steve Ballmer shook on it in April.

tomers the assurances that they work well together and take that problem off of their plate."

Specifically, Sun is working to make sure its AMD Opteron-based servers will be certified as Designed for Windows. Sun also will make sure that its storage drivers work with Windows and with Microsoft's Virtual Disk Service and Vol-

ume Copy Shadow Service.

Sun will build in a competency center near Microsoft's headquarters in Redmond, for customers to test their heterogeneous applications.

Sun also is working to make sure that its identity management software interoperates with Microsoft's Access Manager and Identity Manager software.

In the area of Web services specifications, the two are part of the effort for WS-Addressing, WS-Eventing and WS-MetadataExchange.

When asked about the modest level of the announcements, Microsoft's Hank Vigil, vice president for consumer strategy and partnerships, said, "If you think about the history between Sun and Microsoft, it was quite a contentious history where our ability to even talk to each other was not at all clear." ■

► continued on page 14

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A Kick-Start for Mainframe Web Services

BY JENNIFER DEJONG

IBM moved the mainframe another step forward last month, updating a transaction server that eases the process of exposing CICS applications as

Web services.

The company announced CICS Transaction Server for z/OS V3.1, expected the first quarter of 2005. The updated offering saves developers from

writing the code that enables a CICS application to function as a Web service, said Phil Hanson, IBM CICS product manager. Earlier versions took a first stab at Web services by supporting

the SOAP protocol. But in 3.1 Web services support is "baked into the CICS product itself," he said. IBM also announced CICS Transaction Gateway V6, which uses Java Connector Architec-

ture to bridge CICS to the application server.

By easing Web services creation, CICS applications, such as transaction-intensive travel reservation systems, are able to play a more active role in service-oriented architectures, functioning as both a provider and a consumer of Web services, Hanson said. "It's a way for customers to modernize their mainframe apps, while maintaining mainframe levels of service." Instead of accessing the mainframe as a data store, they can expose the actual application itself, as an SOA component. It's a move away from "client/server thinking to peer-to-peer thinking," he said. ■

Eggplant Tests UIs On OS X

BY YVONNE L. LEE

What does a nightshade vegetable have to do with screen scraping and application testing?

John Brennan, vice president of marketing at Redstone Software, doesn't know, but he does know that very few people forget the name of his company's Eggplant application.

Customers have never heard of another product called Eggplant, he said.

The software is designed to test user interfaces on a remote computer by running scripts on a Mac running OS X. Eggplant can test interfaces on any platform. Testers create scripts that await and respond to items on the screen.

When the program encounters an unexpected response, such as an image or a text field not being available, or a text response other than the one that it expected, the program returns a screen dump of what appeared at the time the failure occurred.

The US\$4,590 Eggplant resides on a networked Mac running OS X and either Apple Remote Desktop 2.0 or the OSXvnc 1.4 server. It will test any client for which a Virtual Network Computing client exists.

New features in Eggplant 2.0 include the ability to use Apple's Rendezvous to discover other computers on the network, a script debugger, auto-completion of keywords in commands, and lookup of script resources. ■

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Birdstep Training RDM Server to Fly Right

BY EDWARD J. CORREIA

Database developer Birdstep Technology is adding high-availability features to a future version of RDM Server, its high-end application-specific SQL database, SD Times has learned. The company says it will add fault-tolerance capabilities through mirroring and automatic rollover, features it has been offering in RDM Embedded 6, a smaller-footprint version of its database for C/C++, Java and SQL, since May 2002.

The current release, RDM Server 6, targets 64-bit Linux, HP/UX and Windows on Intel's Itanium processor, and supports JDBC 3.0 interfaces and XML import/export. Server and runtime pricing is US\$3,000 to start, and is volume-dependent. Development tools are free and can be downloaded at www.birdstep.com/database

/download.php3.

According to Bill Houghum, Birdstep's director of quality assurance, RDM Server 6, which was released in November, also includes enhanced dynamic DDL functionality, which he

said benefits developers mainly by allowing modifications to a database in the field without major disruption. "A developer who may have a system that is already deployed can add additional fields without exporting

and importing [data]." Among the major benefits of the JDBC 3.0 driver, Houghum said, is its ability to communicate directly with a database server; the JDBC 1.0 driver in the previous version went through an inter-

mediary, which translates to slower performance than a direct link. He said JDBC 3.0 also permits developers to create save-points for transaction rollback and parameter metadata for prepared statements. ■

Broader Horizons For Flashline

BY DAVID RUBINSTEIN

Two integrations completed in November are designed to further move Flashline Inc. toward asset management and governance, yet still be grounded in component reuse.

One of the projects, an integration with IBM's WebSphere Studio Asset Analyzer, is designed to fill the Flashline Registry with mainframe assets, according to Flashline CEO Charles Stack. WSAA crawls through S/390 and other assets such as COBOL, CICS and IMS, while the registry makes those assets available to development teams. In this way, main frame assets can be built into Java or .NET distributed applications, Stack explained.

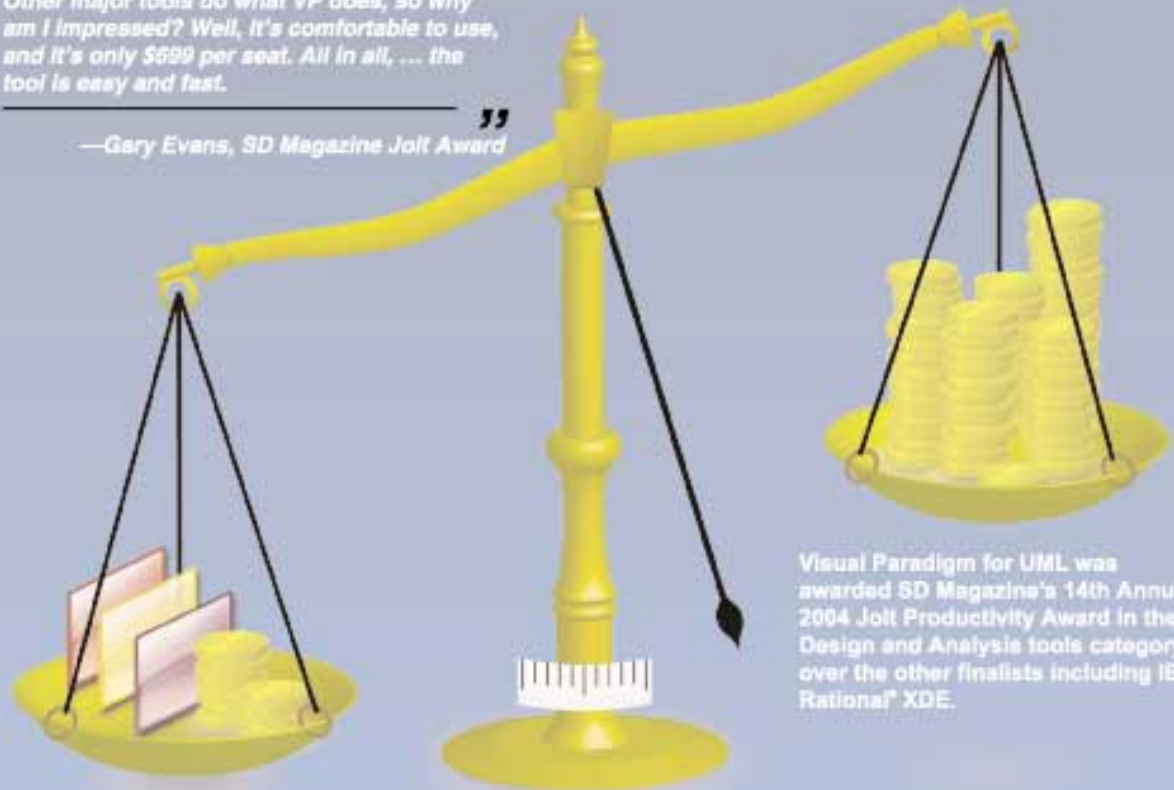
The second integration ties Flashline to Mercury's IT Governance Center, allowing development and IT managers to understand what's in their portfolios down to the asset level, he said.

The moves "put us into a bigger space," but the company's reuse message still resonates, Stack said. "Coding used to represent 99 percent of whatever IT created," he noted. "Now, they're building on top of existing assets, with libraries and components. The percentage of coding is continually decreasing. It's a [development] trend that's not going away." ■

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New Tools for High-Performance Computing

Absoft announces SDK for Linux on clusters; Visual Numerics revs library

BY JENNIFER DEJONG

Late last year, two software companies souped up their supercomputing offerings. Fortran and C/C++ tools maker

Absoft readied in November a software development kit for deploying Linux on clusters and servers, and a handful of tools for Mac developers. And Visual

Numerics updated its numerical library for Java, used not just for science and engineering applications, but also for business.

Absoft's High Performance

Computing SDK, which starts at US\$5,000 for the commercial version, consists of preconfigured tools that let developers more easily compile, debug,

run and optimize Fortran and C/C++ applications running on Linux clusters, said Wood Lotz, president of the Rochester Hills, Mich., company. It includes F95/F77 Fortran and C/C++ compilers from Absoft and IBM, and the FX2 debugger, among other tools. "Instead of deploying 10 things separately, you deploy all of them at once with three clicks," he said.

Also new are tools for the Macintosh OS X family, including Absoft Integrated Development Environment, which provides a graphical interface for developers using recent versions of IBM XL Fortran C/C++ Advanced Edition and IBM XL C/C++ Advanced Edition compilers for Apple's Mac OS X. Priced at \$599 for the commercial edition, the IDE moves the compilers away from the command line and "makes them more Mac-ish," said Lotz. It includes a debugger as well as a vectorization tool that lets developers take advantage of the vectorization capabilities built into the G5 chip, he said.

In addition, Absoft announced IMSL Fortran Numerical Library version 5.0. The collection of prebuilt and tested math routines for developers designing scientific and engineering applications is licensed from Visual Numerics. It costs \$1,699 for the commercial edition and includes the IBM XL Fortran Advanced Edition compiler version 8.1 for Mac OS X.

NEW TO JMSL LIBRARY

In December, Visual Numerics updated its library of algorithms for Java developers. JMSL Numerical Library 3.0, which starts at US\$3,700 per seat, adds support for neural networks and hierarchical cluster algorithms, said Maura McGinnity, the company's senior director of marketing and business development.

Such algorithms are useful not just for supercomputing applications but also for business forecasting and other financial applications that require sophisticated mathematical modeling, she said.

Also new to JMSL 3.0 is a charting class known as a "heat map," which uses different colors to graphically depict data on a map. Visual Numerics also sells libraries for C, C# and Fortran. "Fortran has been the typical language for supercomputing, but people are moving to Java," said McGinnity. ■



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XML Tool From Japan Handles Multiple Vocabularies

BY EDWARD J. CORREIA

Rarely can an enterprise define all of its dealings with a single vocabulary; there are different terms used for communicating with employees, others for vendors, and still others for customers.

According to Japanese development tools company Justsystem, the same principle can apply to software development. But while differences in spoken language may seem subtle, handling them programmatically can be quite complex.

That's why the company is working on xfy technology, an XML development environment that it claims can handle documents with multiple XML vocabularies, known as compound documents, in a single view.

Layer 7 Erects SecureSpan

BY YVONNE L. LEE

After tackling the problem of keeping interlopers out of Web services, Layer 7 Technologies in November released a device designed to manage those who belong.

SecureSpan Bridge, which vice president of products and alliances Dimitri Sirota said complements the company's SecureSpan Gateway, connects client applications with Web services across identity, security and middleware domains. Gateway acts as an XML firewall, managing security, while Bridge ensures secure transactions among clients and servers on a Web services network, he said.

"What the Bridge does is it intercepts Web services messages before they go out onto the network," said Scott Morrison, director of architecture. "It transforms that message into a secure version of the message."

The company's Gateway product creates a secure network for passing XML messages, and integrates with Web services products from other companies, but Bridge is an optional product for managing tokens and single sign-on across that network, said Morrison.

"Software development managers and software developers don't have to worry about retrofitting their applications with security models," he said. ■

According to Shigeki Hagiwara, director of the xfy project, a compound document would be needed to describe, for example, the schematic, material, financial and workflow specifications for a document

used by the manufacturing industry. "It is very rare that a single schema can express all the information that a developer or any document author will ever need to encapsulate within a single document," he said.

To handle the problem, xfy introduces vocabulary connection descriptor (VCD), an XML-based scripting language for mapping one vocabulary to another that Hagiwara said permits a developer to define ren-

derable views for any given vocabulary. “Just by writing an XSLT-like script, a developer is able to define mapping and editing rules for the vocabulary of their choice.”

A free preview version of the software can be downloaded at www.xfytec.com; general availability is expected by June. ■

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News Briefs

MORE UPGRADES

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remote procedure call functions for accessing VMS, OS/390 and VSE data sources; improved support for IBM VSAM, QSAM and PDS data sources, and new support for Software AG's Adabas database . . . Version 5.0 of **SftTree/OCX**, an ActiveX tree control for Windows, now allows print and print preview, new cell editing mechanisms, and XCOPY-based deployment for Windows XP. The component, from Soft-el vdm, costs US\$439 for a single developer license . . . Kuka Controls is offering **VxWin 3.0**, a Windows extension for Wind River's VxWorks.



VxWin is now binary compatible with VxWorks, according to the company, and the new release supports bus-mastering DMA within VxWorks and Wind River's VxVMI memory protection system. It also synchronizes the VxWorks and Windows system clock . . . Version 2004.2 of Perforce's software configuration management system adds new triggers that can enforce coding standards. **Perforce SCM** also has new tools to let administrators execute predefined workflow operations and automate the production of release notes, as well as a new "time-lapse" view that graphically shows how the code within a file has changed over a user-defined time period . . . 9Rays.Net has updated **Report Sharp-Shooter**, its .NET report engine. Version 1.9 includes new documentation, performance enhancements, and new export filters for graphics files and Microsoft Office applications. Also, version 4.1 of the company's **Spices.Net** code obfuscator includes new anti-disassembly/decompilation features . . . Version 2.18 of **CASE Studio 2**, a database development tool from the Czech company CharonWare, adds support for PostgreSQL 8.0, Sybase Anywhere 9.0 and MySQL 4.1. It also offers HTML-formatted reports. CASE Studio 2 helps database developers create and maintain entity relationship diagrams and data flow diagrams, and also automatically generate SQL scripts . . . Spirent Communications



has integrated its **Avalanche** load testing system with TeaLeaf Technology's **RealTea** Web application management software. The products, which are being positioned as a suite for accelerating Web testing, will still be sold separately by the respective companies . . . DataBased Intelligence is offering version 2.5 of **dBase Plus**, its US\$579 database system for Windows-based Web sites. The latest release offers several user-interface enhancements, including control over grid cell colors and fonts, events on mouse-over and live keyboard during processing . . . Flux has updated **Flux**, its set of workflow APIs for Java applications. Version 6.4 adds business process forms, which display and collect information from individuals who participate in business processes. Pricing begins at US\$2,600 for a development, test and deployment license; the company was previously known as Sims Computing . . . Version 3.0 of **Poseidon**, a UML modeler from Genteware, offers improvement to its UMLdoc documentation editor; the latest version can now generate Statechart diagrams. The 3.0 release also includes a collaboration component to facilitate team modeling, and is now integrated into the Eclipse IDE . . . Sun has released a new build of **Solaris 10** to its Early Access Program. The newest prerelease code now runs in 64-bit mode on the AMD Opteron processor.

PEOPLE



Tony Zingale is the new president and COO of Mercury, taking those titles from **Amnon Lindan**, who remains chairman and CEO. Zingale had been president of Nortel's eBusiness Solutions Group, and had also been Mercury's lead outside director. Mercury had been without a separate COO since **Ken Klein** left that job in mid-2003 to become president and CEO of Wind River . . . Klocwork has hired **Russell Ure** as VP of research and development. He previously held that same title for Alcatel's network and service management software products. **Deepak Gupta** is the new president and CEO of iSpheres, which offers a real-time event processing server. He had been SVP and general manager of PeopleSoft's hosted solutions and replaces **Paul Farr**, who is now chairman of Netformx. ■

BEA Announces Devil Of an App Server

BY YVONNE L. LEE

SAN FRANCISCO — The latest version of BEA's WebLogic Application server went into beta in December, shortly after an announcement of the product, which will form the core of WebLogic Platform 9.0.

Code-named Diablo, the application server and other elements of the WebLogic Platform are scheduled to be rolled out over the course of 2005.

BEA plans to focus the WebLogic Platform 9.0 on service-oriented architectures. For its part, WebLogic Application Server 9.0 delivers high-volume messaging according to the WS-ReliableMessaging

specification, which it co-authored with IBM, Microsoft and TIBCO and now supports in WebLogic.

The server will be compatible with the J2EE 1.4 specification, as well as various Web services specifications.

The application server also will boast new management tools that can perform application and server upgrades without bringing down the application. It sports a new portal-based console and command-line scripting language. The console can be customized with third-party management plug-ins. It also can be customized to reflect various roles and privileges

across the organization.

In addition, BEA released its WebLogic JRockit 5.0 Java Development Kit (JDK), which includes the JRockit Java Virtual Machine, the Java Runtime Edition, a compiler and debugger. The JVM, Java class libraries, compiler and debugger are compatible with the J2SE 5.0 specification.

JRockit 5.0 uses adaptive memory management, which is designed to adjust its settings to changing conditions, such as user workload, memory requirements and system memory.

Both the JRockit JDK and the Diablo beta were available for download on Dec. 16. ■

Oracle Focuses on Integration

< continued from page 1

among disparate systems, using either Web services or traditional electronic exchange. It includes a BPEL process manager and business processing to track the activity. It supports the EDIFACT, HL7, Rosetta-Net and SWIFT document exchange specifications.

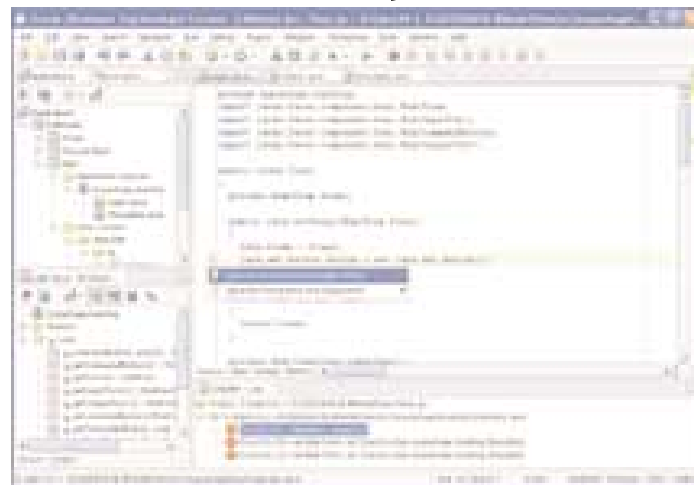
As part of its increased Web services support, Application Server 10g will now add the capability to interpret XML adhering to the WS-Reliability, WS-Security and WS-Policy specifications. It also will support the Apache Web Services Invocation Framework (WSIF).

The BPEL server, which Oracle acquired from Collaxa, is now integrated more tightly with the application server, according to Schultz. Other imported technologies integrated into the Oracle 10g Application Server suite include an event server from iSpheres, a business activity monitoring dashboard from Outlooksoft, Phaos identity management software, and a rules engine from Sandia Labs.

JDEVELOPER

The JDeveloper environment sports an entirely new interface that's based on the open-source JGoodies components and animation, which are available at Sun's dev.java.net site.

"We targeted it to [Jet-Brains] IntelliJ and Eclipse users," said Ted Farrell, archi-



The light bulb feature in JDeveloper gives suggestions for fixing errors.

tect and director of strategy for application development tools.

Oracle also has released its Application Development Framework, which is a set of graphical user interface components that adhere to the JCP's JavaServer Faces specification.

Oracle claims the tool has a 30 percent performance increase, due to enhancements in database access, caching and asynchronous batch processing.

Several features are aimed at making JDeveloper easier to use.

Although Oracle is part of the Eclipse Foundation, JDeveloper is not Eclipse-based. The company joined the foundation to ensure that Eclipse tools could work with Oracle's application server, said Farrell.

"We want to make sure the customer is successful building to the Oracle database and app

server," he said. "We're not forcing them to use JDeveloper to use our runtimes."

Oracle also has plug-ins to work with Borland's JBuilder, he said.

One of the new features aimed at making it a more efficient development tool is a new "light bulb" that suggests fixes for incorrect code. JDeveloper also has a code completion feature that fills in not only keywords, but also variables from imported packages.

In addition, Release 2 of JDeveloper has a feature that shows the differences between versions of a file, even before the file has been saved. This feature works both with its own files and with a source code repository.

New editors include an XML editor, XML schema editor and XSLT mapping tools. ■

Software FX Puts Chart FX Right In Your Pocket

Leading charting technology now available for the .NET Compact Framework and Smart Device applications.

Software FX began shipping Pocket Chart FX for the .NET Compact Framework this month. Priced at a reasonable \$599, Pocket Chart FX includes most the robust features offered in the full Chart FX for .NET, leaving out only those that are not applicable due to device or platform limitations. Pocket Chart FX is also included at no extra charge to the full version of Chart FX for .NET, priced at \$2,699, that includes both Windows Forms and Web Forms functionality.

Pocket Chart FX for .NET is a charting component for rapidly developing applications that extend enterprise data visualization and analysis capabilities to mobile devices. With Visual Studio .NET and Chart FX for .NET, developers can quickly build powerful graphical applications that connect to mission critical data and run on Smart Devices.

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Pocket Chart FX for .NET provides a design-time experience assembly compiled against the .NET Framework that integrates seamlessly into Visual Studio .NET, allowing you to setup chart attributes and properties easily. This consistency ensures that there are no features in the design time version of the control that will not be available in the run-time version limited to work in the .NET Compact Framework and both assemblies adhere to the "small is good" principle for mobile applications.

As a GDI+ intensive component, Chart FX has been developed with coding practices that help improve screen redraw. This is particularly important when considering mobile applications where memory, CPU speed, and other resources are at a premium. Considering the small screen size of PocketPCs, they've made sure charts display well in a portrait rather than in a landscape

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Gluecode Ships Open-Source J2EE Stack

BY YVONNE L. LEE

The same week in November that Kmart announced it was buying Sears, a start-up Java infrastructure company offered developers the blue light special

of a full J2EE stack with the low, low price of \$0.

Of course, that's for the unsupported open-source version, but the start-up, Gluecode Software Inc., is betting that

the US\$3,500 subscription for the Java Open Enterprise (JOE) Standard Edition will still attract discount-minded corporate developers.

JOE will be based on open-

source software from the Apache Software Foundation, said Winston Damarillo, CEO of Gluecode. That Gluecode software package will include the delayed Geronimo applica-

tion server, he said.

When Apache announced Geronimo, the group said it planned to release a commercial version "within 12 months." At the ApacheCon conference Nov. 15, Bruce Snyder, a founder and developer of the Geronimo project, said it would be generally available sometime in 2005.

Gluecode is planning to release the standard version of JOE in the first quarter.

The package will include a portal, security, connection services and messaging, as well as the application server, Damarillo said. It also will include a management console for configuration and support, and external JDBC connectors. ■

Dart Aims At Browser Refresh

BY JENNIFER DEJONG

.NET component vendor Dart Communications is taking aim at the way Web clients and servers exchange information.

The company is expected to announce early this year PowerWEB LiveControls for ASP.NET, a new offering that lets developers build ASP.NET applications that can communicate with the server—and return information back to the client—without having to refresh the browser.

The suite of ASP.NET controls is intended for applications, such as online shopping, that rely on live data, noted Dart's Alex Gladstein, director of the product group. Using LiveControls can eliminate, for example, the need for users to click on buttons such as "update shopping cart," before checking out of an online store. Instead, a LiveControl, such as LiveRadioButton, would recalculate the total cost of items in the cart automatically.

Other LiveControls include LiveTimer, which polls the server at a set interval, and LiveMessageBox, which displays a message. They are similar to many intrinsic Microsoft controls, such as button, image and textbox. But Dart's controls extend Microsoft's Client Callback technology, expected in Visual Studio 2005. Callback provides the plumbing to communicate with the server without a traditional "post," said Gladstein. "But there's still plenty of coding involved." ■

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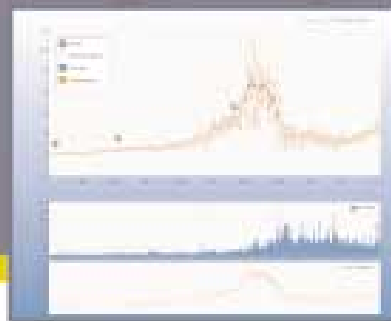
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NitroX 2.0 Examines Apps in New Ways

BY YVONNE L. LEE

Six months after releasing a totally revamped Eclipse-based version of its NitroX IDE for JSP and Struts, M7 last month released version 2.0 with three new views of information inside Web applications.

The three new features are extensions of the AppXRay feature from NitroX 1.0, which maintains a database of Web dependencies throughout an application.

One of the new features, AppXaminer, is a step removed from refactoring. It shows a diagram of all the dependencies of every element in a program. It shows inconsistencies, such as changes in spelling or capitalization.

"I'm very visual," said Paul Courtney, project manager at Dartmouth Medical School, which is using the application to convert a paper-based record-keeping system to a Web-based one. "Some programmers work with a text editor like Notepad.

They can keep track of everything—the spelling, capitalization. I'd like to spend my own time doing other things."

Another new feature, dubbed AppXnavigator, provides hyper-link connections among all the

related elements in a Web application, including being able to navigate between XML and Java.

The third of the new named features, AppXplorer, shows a Web-like view of the application from within the editor. It is

synchronized with the code editor and several wizards so that information changed in any of them is reflected in the others.

In addition to the new named features, NitroX 2.0 has new support for open-

source frameworks and additional Java specifications. It works with the Struts Tiles framework, which makes it possible to build Web pages by assembling reusable pieces of pages, called Tiles. ■

Sun Readies NetBeans, Creator

◀ continued from page 1

mance profiling, low-overhead profiling, task-based profiling, and tight integration into the IDE workflow.

Around the same time, Sun also will update Java Studio Creator, its tool for creating two-tier departmental Java applications. It will be based on NetBeans 4.0.

Java Studio Creator 2.0 will "focus on usability enhancements," said Dan Roberts, group marketing manager for development tools. For example, developers will be able to use it to add JavaServer Faces components to their user interfaces, he said.

Sun will enable the product to work with application servers besides its own, but declined to specify which application servers it was targeting.

"You could probably look at the market-leading servers and get a good idea," Roberts said.

In addition, Sun will publish a set of APIs to write plug-ins for Java Studio Enterprise, he said. ■



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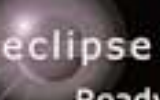
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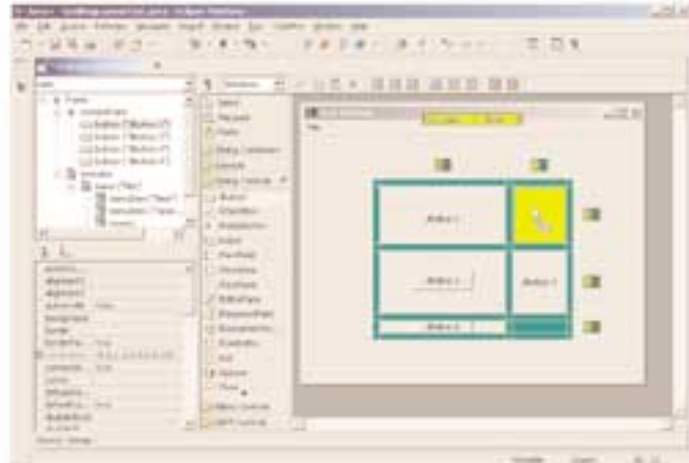
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SOA, Web Services and Martha

← continued from page 1

ular coding standards and acronyms, such as AOP, OAGIS (not to be confused with OASIS) and a plethora of new WS-xxxx specifications. Systems designers began leveraging many of these new acronyms regarding exposed application functionality to create service-oriented architectures. They also began using policies and rule-based engines to tie complex Web services transactions together under the heading of business process management.

Forget foundational standards like XML and SOAP: For 2004, SOA and BPM were the new all-stars, promising a better path toward affordable, scalable, reliable business integration. We'll hear a lot more about them in 2005.

We'll also hear a lot more about the Eclipse consortium. Founded and then set free by IBM, the organization captured headlines as the open-source project emerged as the preeminent alternative tools platform to Microsoft's Visual Studio. Nearly every major and minor tools vendor—other than Microsoft and Sun—jumped on the Eclipse bandwagon, releasing IDEs based on the open-source framework, or plug-ins and integrations that tie together existing tool sets.

Sun, too, advanced its Java platform with the release of Tiger, initially called J2SE 1.5 but then changed to J2SE 5.0.

Sun also announced—but did not yet ship—Solaris 10, a major update to its popular Unix operating system. Solaris becomes the first major commercial operating system to support the 64-bit x86 platform invented by AMD for its Opteron processors, but then cloned by Intel for its server-class Xeon chips.

While Eclipse and Java moved forward, Microsoft's platform momentum stalled. Beset by viruses and security issues, the company pushed back its much-awaited SQL Server "Yukon," Visual Studio "Whidbey," and Windows XP successor, "Longhorn."

Microsoft's troubles give needed sea room to its competitors, including Sun, Apple's Mac OS X and Novell, which thanks to its purchase of SUSE Linux has emerged as a leader in the Linux industry. Linux continues to make gains, most notably in the embedded systems market. Traditional real-time operating systems vendors such as Wind River have embraced the open-source platform.

Will Microsoft get its groove back? Will Larry Ellison force PeopleSoft customers to "upgrade" to Oracle Applications? Will Martha Stewart use business process management to help the Alderson Federal Prison Camp implement Web services-based service-oriented architectures? Stay tuned... ■

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STPcon Proves It's Up to the Test

New tools, upgrades unveiled at testing, performance conference premiere

BY DAVID RUBINSTEIN

BALTIMORE — The release of new analytic software from **Vanward Technologies** was among the highlights of the exhibition at BZ Media's first Software Test & Performance Conference held here at the Hyatt Regency Inner Harbor last month.

The conference drew more than 380 attendees to the three days of tutorials, classes and exhibits, according to Donna Esposito, director of events for BZ Media, which is also the parent company of SD Times and Software Test & Performance magazine.

At the conference, Vanward

officially released **Covergence 2.0**, its quality assurance dashboard designed to provide users with a view of application quality early in the life cycle, according to company founder and CEO Andrew Glover. "It's not enough just to test code," he said. "You have to have visibility into what's being tested. Is the code brittle? Is it complex? This gives QA the heads-up while the application is being built, and the developers can spend extra time writing test cases in those particular areas."

Wily Technology discussed the release of version 5.3 of its **Introscope** product, as part of its new **Management 360** col-



More than 380 people attended STPcon's tutorials, classes and exhibits.

laborative application management solution. New **Introscope** features include the proprietary **SmartStor** data persistence mechanism. Before **SmartStor**,

users of earlier versions of the tool could write only to flat files or **JDBC**.

The company also added a command-line workstation for

scheduling and executing tasks, and a **Browser Response Time Adapter** that allows users to get metrics on HTTP transactions from the browser to the database and back again. A new 360-degree data view gives all stakeholders more insight into an application's behavior, according to senior sales engineer **Hugh O'Brien**. "Whatever view of the data, whatever the role, we match the views to the role, in real time," he said.

SCM tool vendor **AccuRev** announced the release late last month of version 3.5.5 of its solution, with enhanced change package capabilities that allow users to follow a file's history in terms of the packages as well as promoting changes by complete package. A new feature will allow users to shift data containers into an archive, removing them from the "depot" area. Also, the **AccuRev** server will allow users to employ a utility for removing a depot—all files, versions and streams associated with the depot—from the database. This allows users to create a new depot with the same name.

Test tools vendor **LogiGear** said it would release by the end of last month version 2.0 of **TestArchitect**, its action-based test scripting solution. The new version is designed for keyword automation that is meant to bring test design and automation together. A tester or business analyst can design tests using these actions, such as "change location" or "check price," and then if the software under test changes, testers merely need to modify the actions and not recode the entire script, according to **Hans Buwalda**, the chief architect.

Automated testing tools provider **ITKO** announced at the show that it would release version 2.6 of its **LISA** testing tool on Dec. 30. "We feel we cover a broader area than other automated testing tools," said **Jason English**, chief marketing officer. New to **LISA** are the ability to simulate any browser or setting for advanced Web testing, **JMX** support for **BEA's WebLogic**, **IBM's WebSphere** and **JBoss** application servers, and **JMS** support to test **IBM's MQ Series**, **Microsoft's MS MessageQueue**, **Sonic** and other messaging platforms. ■

Business Processes Tie Apps to Goals

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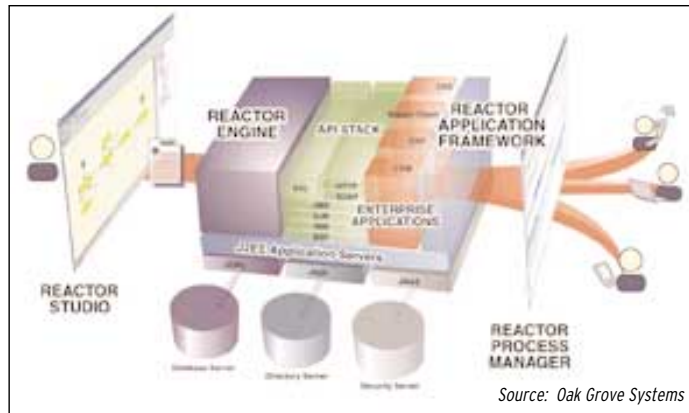
just front-ending a business process," said **Jan Popkin**, CEO of New York-based **Popkin Software**. "You're looking across an entire enterprise. This adds value to the architecture work."

Engineers using **System Architect** would create a model in the **Business Process Model Notation (BPMN)** "that is tied visually and analytically to the entire enterprise, to its business goals," **Popkin** explained. "Then you can detail that through **BPEL** [the **Business Process Execution Language**] down through an automated process. You can bring up the **Oracle** process engine and see" the step-by-step workflow, events and triggers. "You're building the application out from this."

Using this process of moving from architecture to execution, organizations can more quickly respond to changes in their business or regulations, **Popkin** explained. **System Architect** always provided a broad picture of an organization's asset management, financial controls, IT portfolio, communication vehicles and the like. Now, that reference architecture can be fed directly into a process manager, "proving out **SOA**, **BPMN** and **BPEL**," **Popkin** said.

THE HIGHER LEVEL

While **Oracle** and **Popkin** offer one approach, the real value of **SOAs**, according to **Vitria's**



The Reactor BPM suite can be used to create workflow, process integration and Web services orchestration.

director of platform product marketing **Bruce Campbell**, is being able to coordinate the services being put into or taken out of applications to support a higher-level business process.

Vitria last month released version 4.3 of its **BusinessWare** process integration platform with support for the **WS-I Basic Profile**, as well as a new wizard-driven process modeler and a new exception-handling service, **Campbell** said. The service is designed to help users automate responses to data that is either incorrect or out of limit, he added.

BusinessWare 4.3 has been certified as compatible with the **AS2** specification created by the **Internet Engineering Task Force (IETF)**, which defines how document types such as **EDI** and **XML** can be exchanged over **HTTP**. **Campbell**

said the solution will support **BPMN** and **BPEL** in its next release.

Another viewpoint: The ability to do collaborative business process management is the driver behind **Appian's Enterprise 4** **BPM** suite. There has been "a perfect storm" to make collaborative **BPM** possible, according to company co-founder **Mike Beckley**. "Business users have access to information they never had before, and we now have portals to link supply-chain partners and provide visibility to applications. What's still missing is the coordination of people and applications to achieve organizational goals."

Appian's suite includes a process engine and a designer that is **HTML-based** and lets users drag and drop process objects into a workflow without any coding. **Beckley** said the new

version costs **US\$100,000** per user for a typical project.

BRIDGING THE GAPS

While many vendors selling **BPM** solutions approach **BPM** from their core competencies—some solutions are outgrowths of document management solutions, while others have an **EAI** heritage—**Oak Grove Systems** claims to try to straddle the gap between machine-to-machine orchestrations and those that require human intervention.

Oak Grove's recently released **Reactor 6** solution now has an interactive forms capability that allows users to lay out a flow chart and drill down into a specific activity to ensure corporate policies and instructions have been followed, enter comments about the module, and then either approve or reject that contribution, according to CEO **Chuck Ames**.

The new release has full clustering support for **BEA's WebLogic**, **IBM's WebSphere** and **JBoss** application servers, as well as interoperability across **.NET** and **J2EE** environments with a new **Web services** interface, **Ames** said.

Cost had been a major barrier preventing companies from implementing **BPM** solutions, **Ames** said. "BPM has many touch points—directories, databases. Web services and **XML** are lowering the costs of integration dramatically." ■

Orchestrating Processes on the Enterprise Bus

Cape Clear claims to simplify workflow design with BPEL tools

BY EDWARD J. CORREIA

Cape Clear Software in December was set to release version 6 of its namesake enterprise integration suite, with

claims that it would include more reliable message delivery, transparent data persistence and Cape Clear Orchestrator, a BPEL-enabled business pro-

cess management system.

Orchestrator, which was released for beta testing in mid-November, consists of three components: an Eclipse-based

designer, for building graphical representations of business processes; a native BPEL 1.1 runtime engine, for deployment of those processes; and a man-

agement component to monitor and control processes, and to handle events and errors. Pricing for Cape Clear 6 remains unchanged; it starts at around US\$10,000 per server processor.

David Clarke, Cape Clear's senior vice president of products, explained how the designer can be used to build orchestrated workflows while reusing existing code. "You might have a service that validates credit cards, another that updates your CRM database, and another that arranges shipping. All of these might be used by different processes. The designer effectively lets you create a new process and drop in all those services" in a process that he said formerly would require weeks or months to complete.

Services appear graphically on the screen as glued-together components; asynchronous messages also are supported, he added. The designer then outputs a BPEL script that is ready for deployment to the BPEL runtime. "The runtime makes sure that all the orchestrations are handled properly and that underlying systems are called in the correct order."

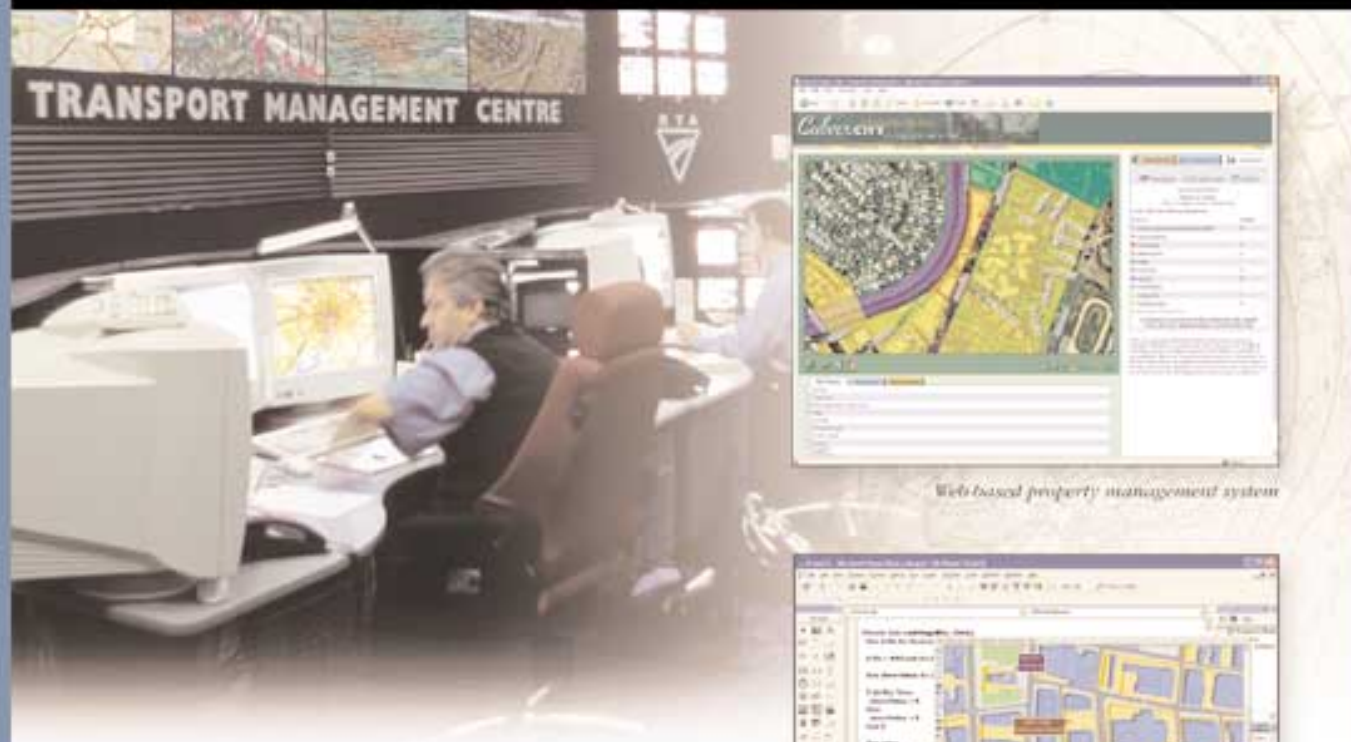
Once deployed, a third component handles management and monitoring. "Processes can commonly run for a long time. An order might not complete immediately; it might run for several days or a week," during which time a customer might call in and ask for the status, he said. "This is a way to monitor the status of various processes that are running at any moment." Clarke said that because scripts are themselves Web services, "you could equally have made that management query interface available to the customer himself."

INTERNET MESSAGE BUS

Also new in Cape Clear 6 is support for the WS-Reliable Messaging specification, which Clarke likened to a venerable IBM messaging protocol. "It's like the MQ Series for Web services. It gives you guaranteed messaging over the Internet, which is very valuable, especially for long-running transactions."

In addition, there is a transparent persistence mechanism that Clark said will automatically and transparently store and reactivate Web services components into and out of databases. "We handle all the [plumbing] between the Web services representations and what the databases need to know." ■

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At Intel, Compilers And Software a Distant Second

BY JENNIFER DEJONG

The "Intel Inside" campaign made the chip maker a household name. But when it comes to compilers and other developer tools, Intel remains a relative unknown.

"Awareness is growing, but developers are not as aware [of our software tools] as we would like," said Intel's Jon Khazam, vice president of the software and solutions group, responsible for the company's compilers, code libraries, performance analysis, threading and clustering offerings. The company released new versions of the tools in November, yet did no marketing beyond a press release issued at that time.

The tools are used by ISVs, corporate developers and hardware manufacturers, such as add-in card vendors, to boost the performance of computationally intensive applications. Intel's compilers for Windows, Linux and embedded development perform 20 percent to 30 percent faster than the standard compilers in the market, including Microsoft's and GNU's, claimed Intel fellow Richard Wirt, general manager of the software and solutions group.

That claim remains largely undisputed by developers of high-performance applications, who on newsgroups routinely tout the merits of Intel compilers. Why, then, has the company that managed to build a brand around a microprocessor done so little to market the performance benefits of its software?

Intel is not trying to compete aggressively in the tools arena, noted Martin Reynolds, a Gartner analyst and fellow. "Its software is about driving more profitability out of the chips."

The company makes compilers and other tools not to derive revenue selling software, but to bolster the performance

of its chips, ensuring continued profitability, he said. "Compilers can deliver 20 to 30 percent more performance out of the CPUs," noted Intel's Wirt. He declined to say what percentage of the company's revenue—US\$30.1 billion for the 2003 fiscal year, with a total net income of \$5.6 billion—Intel derives from software. But it's an infinitesimal amount, estimated Reynolds. Intel's fourth-quarter revenue for 2004 is expected to fall between \$9.3 and 9.5 billion, the company said in December.

Wirt said that thanks to Intel's marketing initiatives, such as its enabling programs that provide operating-system and large application vendors with early versions of its new microprocessors, along with compilers, code libraries and other tools, the company's developer base has achieved triple-digit growth each year for the past four. But he declined to specify actual numbers. He also said that while Intel is working to make its name better known to the developer community, it has no plans to create for its compilers and development tools a branding campaign along the lines of "Intel Inside."

Intel compilers support profile-guided testing, enabling developers to determine which tests they should run in order to optimize code most effectively. "When a developer checks in code, you can't run five days of tests," said Wirt. So it's useful to know which ones will be most effective, he said.

Intel hopes such features will encourage more developers, not just those working on specialized computing-intensive applications such as gaming, to use its compilers.

But, according to Gary Barnett, an analyst at U.K.-based research firm Ovum, "the fact is, very few applications need to be that optimized." ■

PERFORMANCE BOOST

Intel updated its popular performance analyzer VTune and its threading tools in November and also announced a new library based on the Message Passing Interface (MPI) standard.

New to VTune 7.2 for Windows, which analyzes and tunes code, is support for Intel processors with Intel EM64T, which can run newly written 64-bit code and access larger amounts of memory than 32-bit processors, said Sanjiv Shah, a product manager at Intel. The new version, which costs US\$699 per developer, also adds support for smart phone devices, remote Java profiling on Itanium-based Linux systems, and .NET profiling on Itanium-based Windows systems. A Linux version of VTune 7.2 is in beta, Shah said.

New to Thread Checker 2.1, which finds bugs in threaded software, and Thread Profiler 2.1, which pinpoints thread interactions that impact performance, is support for Linux. Threading Tools 2.1 costs \$1,198 per developer.

Intel's new offering, MPI Library 1.0, priced at \$499 per developer, enables more efficient messaging among servers in Linux clusters, Shah said. Based on the Message Passing Interface standard, the library is essentially a set of network plug-ins that support a range of existing and future network technologies through a simple device driver. In the past, ISVs would keep costs down by writing to Ethernet, the lowest common denominator. But doing so resulted in slower performance, Shah said.

—Jennifer deJong

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Push Leads to Pull for RIM's BlackBerry

BY EDWARD J. CORREIA

With enhancements to three of its enterprise products, Research in Motion in late November gave BlackBerry developers the ability to determine programmatically whether content pushed to the company's handheld communication devices was received by its user.

Such feedback is among a number of new features for coping with intermittent connectivity as the company updates to version 4.0 its Java Development Environment for BlackBerry and its BlackBerry Enterprise Servers for Microsoft Exchange and IBM Lotus Domino.



Version 4 servers are smarter about what is sent to devices, says RIM's Heit.

"You can't assume that somebody with a device is always in a coverage area," said David Heit, senior product manager at RIM. "Devices could be turned off or out of [range]." He said that for companies with a commitment to service, the feature can enable applications to send work requests to off-duty employees and react automatically to feedback. "You no longer have to rely on a manual check; now you can automate it."

Also new is support for offline HTML forms, which Heit said becomes particularly important for field workers with spotty coverage. "The browser has proven to be a popular application delivery vehicle, but if the device was out of coverage, the user had to conscientiously save the page for transmission later." He said that forms submitted when a device is out of coverage now are automatically queued and transmitted when coverage is restored. The browser also now supports CSS and JavaScript.

NO IMAGE PROBLEM

BlackBerry devices now can receive and view image attachments. "For someone in the field with something to fix that needs

to reference a blueprint, schematic, X-ray or other document, they can do it." Most common file formats are supported, including BMP, GIF, TIF, PDF and PGN, as well as Word, Excel and PowerPoint, Heit said.

To avoid clogging the airwaves with huge graphics downloads, device software works in concert with the new servers to display only what the user requests, he said. "I can get a thumbnail of the image and zoom in to enlarge it as

much as I need to, up to the full resolution," Heit noted, adding that the software even handles compressed files with aplomb. "If someone sends you a ZIP file, the server will open it and let the user selectively open just the file they want."

Air time is further optimized, Heit claimed, thanks to a local XML parser, a Java library that he said prepares XML binaries or text data for use by the server. "With a parser/generator on the handheld

side, I can tokenize the XML and transmit the least amount of data over the air. You couldn't do that without a matched pair on the server and handheld side."

Heit said the Java Development Environment for BlackBerry 4.0, which is free, also now supports MIDP 2.0, CLDC 1.1 and J2ME; an updated BlackBerry simulator also is included. The IDE can be downloaded at www.blackberry.com/developers. ■

Object DB Native to Java and .NET

BY EDWARD J. CORREIA

db4objects Inc., claiming to offer the only object database native to both Java and .NET, began operations in late 2004 with db4o, an open-source version of the database conceived in 2000 by Carl Rosenberger, now the company's CTO.

"It was a child of the new millennium," said CEO Christof Wittig, of db4o, which began shipping commercially in 2002 for Java. "There has been a lot of technology we [had to] build to make it native for .NET languages. It's the only object database available

on both platforms."

An object database enables object-oriented developers to store and retrieve objects created by their applications. Wittig said db4o, implemented as a library or DLL, is easy to use. "You put it in your class path and write one line of code, and db4o takes care of persistence."

Wittig said that for developers targeting mobile devices, access to a database that's native to both Java and .NET is particularly beneficial. "This is important if you want to develop an [application] to run on [multiple]

mobile platforms that might be running Java or .NET," he said, adding that the software runs and behaves the same way on both platforms. "That is a huge benefit." The database occupies as little as 250K of device memory, he said.

Simplicity and small footprint, Wittig claimed, also set db4o apart from competitors. "It's nonintrusive, which differentiates it from the other guys. In the embedded database market, we believe that relational databases and object-relational mappers are the wrong choice. Why add layers and complexity?"

Another benefit, Wittig claimed, will be easier code maintenance. "The object model is not changed when you store objects. This makes it much easier to refactor down the road, because you can change your object model at any time. The database in real time will analyze and change the object model and the persistence layer." In contrast, to make changes to a field name in a string-based API or a relational database, he said, a developer "would have to go through the code manually and change all [references] to that field."

The company also will differentiate on price. When deployed commercially in volume, licenses for db4o will cost about US\$9 per device, including source code, services and support. "Others cost between \$69 and \$300," he said. "We want to build a product revenue company and have as little service revenue as possible." The software is licensed under the GPL, and can be downloaded now at www.db4objects.com/community. ■

In Embedded, 2004 Was the Year of 666

BY EDWARD J. CORREIA

If numerologists looked at nothing but embedded operating systems this year, they would likely develop a sense of foreboding. The fifth year of the new millennium saw at least three sixes: VxWorks 6, Palm OS 6 and Linux 2.6. Even Microsoft, with the release this year of Windows CE 5, is likely toiling feverishly on version 6.

But who knows what evil lurks in the heart of the process model, which was implemented in Wind River's VxWorks 6, unveiled in February. What's more, the embedded behemoth this year sprouted a Linux strategy, as it embraced not just the operating system's memory protection, but also its open-source development model and philosophy. Wind River later that month teamed up with Red Hat to build an embedded Linux, and in November began packaging a generic distribution as part of a Linux-based

network device platform.

The company also made strides in the continued migration of its development tools to Eclipse.

STRANGER THAN FICTION

Try to keep up. When Palm OS 6 Cobalt became generally available in February, technology developed by a guy from Apple and acquired from his company Be by what used to be Palm Inc., and before that was the Palm Computing division of US Robotics and then 3Com, formed the basis of an operating system now used in devices developed by Handspring—the company formed by PalmPilot creators who left and then were bought back—and now maintained by Palm spin-off PalmSource.

PalmSource also published Protein, an ARM-native API for Palm OS 6 that it pledged will remain consistent as the operating system advances, thereby

avoiding the twisted web of APIs left behind by legacy Palm OSes. PalmSource also halted advancement of Palm OS 4. Version 5, still used in many low-end devices, was renamed Garnet.

With an impact reaching far beyond embedded, the declaration of a stable Linux kernel 2.6 in late December 2003 heralded the end of effective limits on process IDs, users and groups, sending them into the billions. For embedded developers, main benefits of 2.6 include the merging of Ingo Molnar's 0(1) scheduler and Robert Love's preemptible kernel into the main kernel tree. Many developers believe that the implementation of a consistent method of task priority assignment and kernel preemption will benefit real-time application developers with more control, faster performance and better portability.

Among the first companies out of the gate with an embedded Linux distribution based on the 2.6 kernel was LynuxWorks, which began beta testing Blue Cat Linux 5.0 in September 2003, three months before it was declared stable; the company now offers BSPs for dozens of designs based on ARM, PowerPC, MIPS and SH3.

TimeSys began beta testing a 2.6-based version of TimeStorm Linux for PowerPC in February, and at the same time released an Eclipse-based SDK for the platform. To LynuxWorks' target list, TimeSys adds SH4 and UltraSparc designs. MontaVista in September unveiled an evaluation version of its MontaVista Linux Professional Edition, which it says can be used to test current 2.4 apps against 2.6 features on x86; a MIPS preview edition followed in December. ■



EDITORIALS

Looking Forward

The new year promises a wide range of new tools, technologies and platforms for development teams—arguably the biggest set of offerings in several years.

In the final weeks of 2004, BEA and Oracle announced platform updates, with WebLogic 9 and Oracle 10g Release 2, both of which are centered on helping enterprises implement service-oriented architectures with business process management—both companies' strongest moves in that direction. Along with IBM's WebSphere 6, announced in October, and newly revitalized J2EE application servers from Sun and JBoss, the Java community will have a strong set of offerings to choose from in the new year.

The Java tools camp is also undergoing a refresh, with many of the choices centered around Eclipse 3.0, including the new IBM Rational tools announced in late 2004. But the open-source tools platform hasn't yet won the battle: Oracle's forthcoming JDeveloper 10g Release 2, BEA's WebLogic Workshop, Sun's Java Studio and Sun Studio, and Borland's JBuilder remain firmly outside Eclipse's orbit.

The Microsoft community is eagerly looking forward to two key releases in 2005: the much-delayed SQL Server 2005 and Visual Studio Team System. With the new database, Microsoft's .NET platform will be complete; with the updated tools, developers will be given much-needed collaboration and test/QA capabilities inside the box. Both releases should inspire a flurry of activity for .NET shops.

In operating systems, Solaris 10 may be the most highly anticipated launch, now that Longhorn is delayed to 2006. Apple's Mac OS X 10.4 "Tiger" will appear in the first half of 2005, and will include a revamped Xcode IDE.

In the open-source world, it's unlikely that the Linux community will see a major operating system update in 2005—but the momentum is shifting to for-profit development projects, with the very active JBoss, MySQL, Berkeley DB and other initiatives getting more attention than the Linux kernel or Apache Web Server.

There have always been two camps involved in the open-source movement. The early winners were the "free as in speech" camp, which perceived open-source software as a movement against proprietary systems and against big corporations such as AT&T or Microsoft. But others took a different view, focusing on the benefits of "white box" software. Regardless of business model, the benefits of open source were that the code could be examined, tested, validated and extended. The for-profit projects, as well as commercially sponsored projects like NetBeans and Eclipse, may gain the upper hand in 2005.

Best of the Best

Speaking of the upper hand: Nominations are now open for the third annual SD Times 100, which recognizes the companies and organizations that most broadly "set the agenda" for software development managers, developers and the industry through leadership and innovation during the past year.

Judging is by the editors and writers of SD Times, and we welcome your nominations. Learn more and download the form at www.bzmedia.com/sdtimes100.htm. The deadline for nominations is March 1. ■

Letters to the Editor

VALUE OF ARCHITECTURE

Compliments on an excellent article ["Angels in the Architecture," Dec. 1, 2004, page 23, or at www.sdtimes.com/news/115/special1.htm]. The ripple effects of efficiency on considerations of these issues on system architecture alone will create immense value and return on investments industrywide.

Edwin Pereira
CEO

ISOLVEDIT Corp.

TANGLED INTERNET WEB

I'm surprised and disappointed in SD Times for not making any mention (not even one sentence) of the beginnings of the Web in the ARPANET in the article "A Decade of the Web and the W3C" [Dec. 1, 2004, page 1, or at www.sdtimes.com/news/115/story3.htm]. It's as if the Web was invented in 1990, when in fact it began in the 1960s.

If you read Hobbes' Internet Timeline at www.zakon.org/robert/internet/timeline/, you'll even see that the first virus occurred in 1980, 10 years before your timeline. E-mail was invented in 1971.

Tom McGibbon, CSDP
ITT Industries, AES

Editor's note: While the Internet has been around for many decades, the series of articles was marking the evolution of the World Wide Web, which is a client/server model that uses the Internet.

OUT OF DATE?

I was intrigued by the Special Report "C# Gets Sharper" [Nov. 15, 2004, page 31, or at www.sdtimes.com/news/114/special1.htm] because while I'm a Java developer, I'm trying to keep up to date on the C# world. However, the last part of the fourth paragraph makes me wonder how outdated the rest of the article is: "The result is greater predictability and performance, said the former Java programmer who now uses C#. The forthcoming version of Java, code-named Tiger, also promises support for generics."

The dateline on the article is Nov. 15, 2004, but it reads like it was written many months ago. Java 5.0 (aka 1.5.0) has been officially released for almost two months and most definitely has generics support (in addition to other new language features that

C# doesn't yet have). It also seems like the article is biased because the implication in the quote above is that C#'s generics feature will make the code run faster, when it's hardly likely to do so (generics are a compile-time programmer feature, not involved at runtime)—although if the code does run faster, I'd like to hear why.

Please try to keep biases out of articles such as this because it does a disservice to all readers.

Ted M. Young
Staff Software Engineer
eBay Inc.

There is a statement in the article "C# Gets Sharper" attributed to Don Awalt: "Much of what's new for C# developers is not in the language itself, but in the framework."

This is actually incorrect. Of the four main features (Generics, partial types, anonymous delegates, iterators), only one is a framework-level enhancement (Generics); the others are just compiler/language features which required no modifications to the framework at all.

Nicholas Paldino

DON'T BLAME POPULARITY

I found your article on "The Lessons of Software Monoculture" [Nov. 1, 2004, page 28, or at www.sdtimes.com/opinions/guestview_113.htm] to be interesting. I strongly agree that C/C++ is the root cause of most of the security flaws in all software for the past decade (or possibly longer).

What I had trouble with is your argument that the flaws in Microsoft's software come from the fact that it is popular, not that it is improperly designed.

You seem to argue that any software product that obtains "the lion's share" of the market will suddenly gain "the lion's share" of security flaws. I cannot see how a reliable product with 20 percent share will suddenly become a flawed product as it attains 60 percent share.

There are many software products that have nearly 100 percent share (Operating Systems and Applications for the Palm, QuickBooks, Quicken and AutoDesk products come quickly to mind) that have few (if any) security flaws.

Popularity alone cannot create flaws.

What I cannot understand

about Microsoft is that since their programmers have written many books on creating reliable code, why do their programmers fail to produce reliable code? Could it be some internal culture that separates those who write books from those who write code? If these people are "experts," why are virtually all of the flaws in Microsoft code found by people outside of Microsoft?

Could there be some problem in the way Microsoft creates code that prevents effective testing? Any C library can be rewritten/replaced. Does Microsoft lack the manpower, or do their programmers lack the ability to replace the flawed libraries?

In over 10 years, Microsoft has been unable/unwilling to create the application "Access" for the Mac (even though it sells "Office Professional" for both platforms, they have never included the same software). There are tools included in Microsoft's own software development environment to scan for many of the known flaws in C/C++. Are these tools simply not used? Are they not available to inside developers?

I believe that your logic may accurately apply to large corporations. Size may indeed produce more flaws. We have all watched very large companies become so large they could not remain in business. Internal problems may be at the heart of Microsoft's code problems. We will never be allowed to know enough about the internal working of Microsoft (or see their source code) to be certain what the exact source of the flaws is.

It seems illogical that Microsoft could be the largest software company with the best programmers and produce (what some security experts claim) is the worst software. The problem may not be logic in its origin, the source may be the illogic of humans. Microsoft, like most large organisms, may be its own worst enemy.

Jonathan Magnus
Systems Administrator
Baylor College of Medicine

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A Swift Kick in the Aspects

Aspect-oriented programming is a refinement of object-oriented programming that is now becoming available in a variety of mainstream projects.

Although aspects have for the most part garnered their attention on the Java platform, the AOP.NET project brings aspects to .NET.

I've been interested in aspects since being very, very impressed by AspectJ in the summer of 2001, shortly before my embrace of the .NET platform.

I freely admit to being biased toward linguistic refinements as a route to increasing productivity, and perhaps my enthusiasms got the better of me when I predicted that "within a few years, aspects will be as much a part of the programming lexicon as objects are today." But at the very least, development managers should familiarize themselves with aspects as being able to contribute uniquely in maintenance and meta-programming scenarios.

Aspects are classes whose methods are injected into existing programs at "join points," the most common of which are method entry and exit. Another way to put it is that aspects intercept method invocations and surround the existing method with new behavior. The other critical feature of aspects is that they do this without any modification of the existing source code whatsoever.

This is in stark contrast to .NET's "attributes," which oth-

erwise are suggestive of the types of areas where aspects might be applied. In an aspect-oriented environment, you can say, "Whenever any method matching this signature is invoked, do x," while with attributes, at the very least you would have to globally search and insert the attribute and come up with your own technique for intercepting the method calls.

The justification for aspects is that they be used to address concerns that cut across a broad variety of classes. The canonical example is logging—any non-trivial system can benefit from configurable runtime instrumentation, but the statements for registering a class or method and adjusting its verbosity have nothing to do with solving the domain problem.

In a non-aspect system, the behavior of the logging system ends up being defined by hundreds or thousands of lines of code spread throughout the system with no organizing structure. In an aspect system, all of the control aspects and a great deal of the logging statements themselves, can be defined in a small number of source files and the behavior "injected" into the system without destabilizing it.

Logging, security, transactions...everyone agrees that there are a certain number of "cross-cutting" concerns where

aspects are appealing. What has proven elusive are the techniques to discover aspects where otherwise a programmer would find objects.

In the late 1980s, the cliché was that you wrote an English-language description of the problem at hand, circled the nouns, underlined the verbs and then matched them up to produce objects. Well, no, not to actually produce production systems, but it was a heck of a good piece of pedagogy. It was a simple technique, it produced classes that could be judged as more or less "correct," and it allowed you to gloss over a certain amount of mechanics while focusing people on the benefits.

Unfortunately with aspects, the easily explainable examples are not exactly intractable problems. Mention logging, for instance, and the first question will be: "What's wrong with System.Diagnostics, Lorne Brinkman's DotNetLog, or Jaroslaw Kowalski's NLog?" Nothing. No one claims that aspects change the rules of program structure the way that objects did—a Template Method here, an STL-like generic there, and you've got the runtime structure of an aspect system in your "plain old objects" language.

The other challenge to aspects is self-containment. Injecting behavior between a method call and its activation is

easy to like as long as, like logging, the aspect you've introduced works entirely by side effects and doesn't modify the inputs or outputs of the target. But once you start converting all input temperatures to Celsius or adding in the tax on prices being returned, hard questions rapidly mount. How should aspects combine when two are applied to a join point? Can it be guaranteed that a **this** reference cannot shake itself free of the now-essential aspects?

In my opinion, these disadvantages are relatively minor compared with the benefits. Aspects allow you to think about and restructure your system in ways that are very significant. It is a measure of their power, I think, that their greatest benefit may come when used to maintain and evolve a system, where the stability of the existing codebase is so important. The AOP.NET project, available at sourceforge.net/projects/aopnet, uses reflection to create proxies, a strategy that introduces a certain amount of performance penalty, but is easy to work with and has the huge benefit of allowing aspect-oriented programming from any .NET language.

Aspect-oriented programming has a number of high-profile successes in the Java world: notably its inclusion in the increasingly popular JBoss application server. With the release of AOP.NET, .NET programmers finally have a chance to see what all the fuss is about. ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

Windows & .NET Watch



Larry O'Brien

What's So Hard About Web Services?

Creating interfaces to legacy data systems was indicated as the most vexing problem to developers trying to build Web services—that is, when they can find the time to work on them at all.

According to Evans Data Corp.'s Web Services Development Survey, 2004: Fall, which polled more than 400 developers, nearly 1 in 5 cited lack of resources, including skilled developers and time, as their biggest concern relating to Web services development. That is almost equal to the number having trouble mating Web services with legacy systems, which has risen from 8 percent a year ago.

As a result of a cavalcade of specifications to appear in recent years, according to the study, more than 17 percent of the respondents said they are confused by and concerned about changing standards or a lack of any standards at all.



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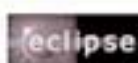
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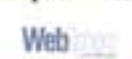
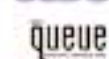
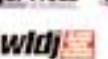
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Outfoxing IE

Newspaper accounts and Web site postings would suggest that Firefox 1.0, the recently finalized open-source Web browser, is winning many converts. In a late-November survey by One-Stat.com, nearly 5 percent of Web surfers were using Firefox, most of them former users of Microsoft Internet Explorer.

While 5 percent against Microsoft's 89 percent market share might not sound like much, it is a greater share of its respective market than Apple has, or Linux has on the desktop.

In the David versus Goliath contests of the computer industry, only AMD has more than the 5 percent in its market share. But what makes the Firefox number a big deal is how fast it has happened: During the first month of availability, 750,000 downloads occurred.

The victories being scored by Firefox are not entirely because its technology is greatly loved (as is the Mac, among its users) or the province of a devoted base of evangelists (as in Linux desktops); rather, it's a fundamental rejection of IE. The ascending market share for Firefox is almost perfectly matched by IE's market share decline.

I am one of these converts. I switched to Firefox at its 0.8 release for one reason

only: I was concerned about security. The number of attacks on IE, and Microsoft's repeated inability to lock down security despite making security the top corporate priority, had me concerned. Our company just doesn't have the bandwidth to be rebuilding systems trashed by security bugs in IE. (For the same reason, I abandoned Outlook as my mail agent a long time ago. Today, my Outlook handles calendar, contact info and to-do lists—but no mail.)

If IE were not so vulnerable, I doubt Firefox would know the success it's currently enjoying. But that's not the whole story. Firefox also presents a well-designed interface, remarkable configurability and some handy features. The configuration aspect is worth examining. Configuring IE is constrained to a few pull-down menu options and the ever-dangerous registry settings.

By contrast, Firefox puts hundreds of settings within easy access. Just type in the URL *about:configure*, and you'll be presented with a comprehensive list of features, which can be changed with a mouse click. (If you want to configure multiple

PCs for Firefox, you have the option of putting all the settings in a JavaScript file that the browser reads at start-up.)

Another feature I really like is the download mechanism. Firefox begins file downloads immediately, and it is steadily downloading while presenting a dialog box asking what to do with the file. As a result, downloads are often complete before you've even clicked the OK button on the download dialog—a lovely feature.

Much has been made in the press about Firefox's being open source. In most cases, the fact that a product is open source is of little practical significance to me (and, let's face it, to most people). In the case of Firefox, it certainly has little to do with its success.

Consider that much of Firefox derives from Mozilla, which was open source, and went essentially nowhere. But in browsers, the open-source aspect has a special value that does not exist in other applications (such as OpenOffice, for example): quick security patching. As Firefox gains greater acceptance, it will surely attract hackers.

Integration Watch



Andrew Binstock

Open-Source Context

I'm conflicted about open-source software. I just read yet another alarmist SCO-versus-all-that-is-good-with-the-world magazine article that fretted that the SCO-IBM lawsuit meant the end of open-source software. As I read, I found myself thinking that, even though I use a lot of open-source stuff, the end of open source as we know it might not be such a bad thing.

My most recent experiences with Tomcat demonstrate my dilemma. The newest version of Tomcat was just plain broken. It didn't load and run custom tags correctly, for example. Though I could (in fact did) go to an earlier version, the fact that Tomcat wasn't subjected to even rudimentary regression testing is disturbing.

The next issue is one of documentation and developer attitude. I wanted to use a local-configuration-file mechanism that's pushed heavily in the documentation (*context.xml*), and I was deploying from the development directory using the *Ant build.xml* file that's shipped with Tomcat. This process simply doesn't work.

I started with the documentation to find a solution. Tomcat's documentation is virtually unusable, though. It's a hodgepodge of inadequate .html files. There's no way to print it. There's no real organizational principle, index or search mechanism. A lot of the documentation

is written by developers for other developers, so it is sketchy at best, and incomprehensible to a new user.

I then subscribed, reluctantly, to the Tomcat-user mailing list. I say "reluctantly" because this is a high-volume list with a lot of noise on it. The answer I got from the list was disturbing. I was told that direct deployment from a development directory was added only because users demanded it.

The developers (I'm reading between the lines) didn't really want to add the feature. They also didn't want you to deploy from a directory for philosophical reasons. Consequently, they implemented local-directory deployment badly—in a minimal way. A casualty of this process was *context.xml*. In order to get that feature to work, I would have to deploy in a jar file. However, jar deployment is a real annoyance when you're doing test-driven development because it adds time to the very short (5-minute) compile-deploy-test cycle.

Moreover, nowhere do the docs even hint that *context.xml* works only in a jar deployment.

The most disturbing part of this discovery process, though, was the attitude of the developers who were contributing

to the list. The prevailing attitude was one of arrogance, elitism and general contempt for the poor slob like me. I admit that I'm easily annoyed by developers whose sense of self-worth seems grounded in knowing more than anybody else. Inadequate documentation is a side effect of this attitude, since gurus lose their guru status if they commit their knowledge to paper. Most of the problems discussed on the list should have been addressed in the documentation.

So I checked out the source code, thinking that I might be able to add a patch myself. Not surprisingly, the code is a mess. It's poorly structured, poorly documented and poorly written. Poor code quality in an open-source project shouldn't be surprising. The code is, after all, put together by people with time on their hands.

Some other open-source source code that I've seen is equally bad—Hibernate is a mess, for example—and many commercial projects aren't much better (much of the Java library code is a case in point). That is, badly done code isn't in and of itself a reason not to use a piece of software. Combine badly done code with inadequate testing and documenta-

A lively community of developers will just as surely produce patches quickly, which will present Firefox with a continued superiority over IE. Another benefit of open source—at once cute and probably unforeseen—is one hacker's determination to provide a faster surfing experience. He recompiled Firefox into various versions, each one optimized for a different Intel processor. These souped-up downloads can be found at www.moxx.ws.

The most common benefit of open source is incorrectly viewed as being its price: "free, as in beer." This is certainly not a significant factor in the emergence of Firefox, since all major browsers are likewise free. And the "free" tag is no guarantor of success, as the Opera browser will attest.

That browser developed a small, fervent community, despite a number of peculiarities. Opera decided at an early point to interpret strictly the specifications for HTML, CSS and other Web standards. This design produced a browser that was standards-compliant but that rendered Web pages differently from all other browsers.

Firefox is the real McCoy—and the first free, open-source product that warrants the same wide embrace given to Apache and Linux. ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

tion, however, and you have the makings of a disaster.

The bottom line is that you have to do a lot of work to use an open-source product like Tomcat. You have to test new versions rigorously; you have to compensate for inadequate documentation by using a high-volume mailing list that may or may not provide an answer in a day or two; you have to trust amateurish code, which you can't really repair yourself because your version will no longer be "standard." Even if you could repair the code, progress on your real project would slow down.

All of these problems translate directly to wasted time and wasted money. The Tomcat team has no incentive to fix any of this because they're not being paid and have no market pressure on them to improve quality or provide real customer support. I know that the open-source party line is that third parties will step up to fill these gaps, but then you're paying for the software, aren't you? So much for the price advantage.

In all fairness, some open-source projects don't have many of these problems, but those projects tend to have started life as commercial software that was released to the open-source community. I have to believe that the same market pressure that pushes a commercial product can't help but forge a better product. ■

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

Java Watch



Allen Holub

Big Finish to a Quiet Year

Just when it looked as if 2004 would go down as one of the quietest years ever for mergers in the software industry, Oracle finally locked down its US\$10.3 billion acquisition of enterprise applications rival PeopleSoft, ending an 18-month struggle and marking one of the largest takeovers in industry history.

Oracle also inherits the customer base from JD Edwards, which was acquired earlier by PeopleSoft, and joins SAP as the two largest remaining players in the ERP/CRM application space. Left unsaid for now is the status of an agreement PeopleSoft reached in 2004 with IBM to integrate the two companies' software; early indications from Oracle are that the company does not want to pursue that collaboration.

Three days after the Oracle deal was announced, security software maker Symantec announced it would buy data storage and recovery software company Veritas for US\$13.5 billion. As the security software market is growing much faster than the data storage market, questions about the deal have arisen. Analyst Nitsan Hargil of Friedman, Billings, Ramsey & Co. was quoted as saying, "While we believe, longer term, that the acquisition of Veritas could make for an exciting company, we are concerned about the negative impact it will have on Symantec's growth profile." Hargil downgraded Symantec's rating to "market perform" from "outperform."

In the application development space, Serena's US\$380 million takeover of Merant resulted in the growth of Serena's application life-cycle management offerings. That acquisition came on the heels of a 2003 buyout of TeamShare and bumped up Serena in class.

Also last year, Watchfire purchased Sanctum, giving the company an instant presence in the application vulnerability assessment market.

While M&A was slow, there was no dearth of activity in courtrooms around the world.

Microsoft settled a long-running feud with Sun, agreeing to pay Sun US\$1.6 billion and to work together for 10 years. This settled the second lawsuit between the two; the first, settled in 2001, apparently was not satisfactory to Sun. The case involved what Sun claimed was Microsoft's improper use of Java technology. That ended with Microsoft paying Sun some \$20 million and agreeing to phase out products with older Java implementations in them.

While Microsoft barely blinked over the \$1.6 billion payment, posting revenue of \$36.8 billion in fiscal-year 2004, Sun continued to struggle. When Microsoft's payment is removed from the equation, Sun posted a net loss of US\$376 million for the year. As for working together on technology, the two companies have little to show beyond some Web services specification efforts and some interoperability points.

Microsoft and Sun weren't the only companies in court this year, though, as SCO continued to keep the heat on any and all Linux vendors, claiming the operating system itself infringes upon some licenses SCO holds. SCO also resurrected a business model not widely employed since "The Five Families" dominated New York's crime scene—extract protection money from companies to stave off potentially costly and lengthy litigation.

Speaking of criminal activity, two top

executives at Computer Associates—including former CEO Sanjay Kumar—were indicted on securities fraud and obstruction charges this year for allegedly cooking the books by including license sales in quarters that already had been closed. CA paid a US\$225 million settlement to shareholders who were hurt

by the fraud and agreed to cooperate with the government in recovering compensation paid to former executives who have been named in the scandal. Meanwhile, the company again rebranded some of its software development tools as it continued to search for a way to bring its products to a wider audience of development shops.

Businesses also sought out new models this year, giving away open-source software and trying to turn a profit from providing services and support. Novell and JBoss were on the lead of this emerging area—Novell with its Linux distribution, JBoss with its Java application server. And Laszlo Systems promised by year's end to release the Enterprise Edition of its presentation server for rich-client applications as open source. All had the same goal—drive adoption by removing price barriers. The problem will be turning a community of open-source contributors and advocates into a company. Developers who work on open-source projects tend to like the autonomy and the flexibility to move from project to project as they see fit, contributing to more than one effort at a time.

To combat that, JBoss CEO Marc Fleury told SD Times last March that his company will retain control of the code and hire the top engineers working on the project to keep them from moving on to other projects. So, where does open source end and proprietary begin? Isn't "next-generation" open-source just another name for business as usual?

Happy New Year, everyone! ■

David Rubinstein is editor of SD Times.

Industry Watch



BUSINESS BRIEFS

PalmSource has agreed to acquire **China MobileSoft (CMS)**, a leading Chinese mobile phone software company. PalmSource will issue about 1.57 million shares of its common stock for CMS. The transaction is expected to close by the end of February. The combination of Palm OS and CMS' software products will give PalmSource one of the broadest lines of mobile software in the industry, powering mobile phones at all price points in all regions of the world, according to the company. "This is the next stage in our growth and a major milestone for the mobile phone industry," said David Nagel, president and CEO of PalmSource, in a statement. "We believe the combination of PalmSource, CMS and Linux gives us the technological and market critical mass to compete with even the biggest proprietary operating system companies" . . . **Neon Systems** has acquired **ClientSoft**, a privately held mainframe integration software vendor based in Miami, known for its legacy integration solutions for Microsoft .NET, Java and Web services environments. The deal involved Neon paying ClientSoft US\$10.5 million in cash and issuing warrants for 1.125 million shares of stock at an exercise price 1.33 times the stock's closing price of \$3.61 on Dec. 13 . . . Equity firms **Francisco Partners** and **Thoma Cressey Equity Partners** were expected to acquire **WRQ**, a mainframe access solution provider, by the end of 2004. Terms were not disclosed. Shaun Wolfe, previously president and COO, will

become the CEO upon completion of the transaction, the company said. Doug Walker, the current CEO and co-founder of the company, announced he will retire. WRQ has been in business since 1981 . . . **Hewlett-Packard** has opened the HP Center for Public Sector IT Thought Leadership, located within HP's Washington, D.C., facility. The center is a virtual hub to HP's global network of solution centers, which offer the tools and expertise to develop, test and validate solutions. Public sector organizations can come to the center to discuss integration and improve access to information and collaboration. HP is driving into the public sector, where the company has garnered more than US\$1 billion in new revenue. The Thought Leadership center will offer a virtual design center for government end users and solution partners to plan proofs of concept and prototype solutions on HP equipment, and an environment for cross-governmental collaboration and briefings . . . Several of Texas' leading high-tech companies voiced strong support for Governor Rick Perry's economic development plan, announced last month, designed to help the state compete with other states and foreign governments for job creation and private investment. Perry's plan calls for a US\$300 million renewal of the Texas Enterprise Fund, the creation of regional innovation centers and establishment of the Texas Emerging Technology Fund. This program has already created some 15,000 jobs in Texas. ■



CALENDAR OF EVENTS

- | | |
|---|-----------------|
| Macworld Conference & Expo
San Francisco
IDG WORLD EXPO
www.macworldexpo.com/live/20 | Jan. 10-14 |
| OSDL Enterprise Linux Summit
Burlingame, Calif.
OPEN SOURCE DEVELOPMENT LABS
www.osdllinuxsummit.org | Jan. 31-Feb. 2 |
| Web Services on Wall Street
New York
FLAGG MANAGEMENT & LIGHTHOUSE PARTNERS
www.webservicesonwallstreet.com | Feb. 1-2 |
| VSLive
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FAWCETTE TECHNICAL PUBLICATIONS
www.ftponline.com/conferences/vslive/2005/sf | Feb. 6-10 |
| LinuxWorld Conference & Expo
Boston
IDG WORLD EXPO
www.linuxworldexpo.com | Feb. 14-17 |
| Web Services Edge 2005 East
Boston
SYS-CON MEDIA
sys-con.com/edge2005east | Feb. 15-17 |
| SHARE
Anaheim
IBM
www.share.org | Feb. 27-March 4 |
| EclipseCon
Burlingame, Calif.
ECLIPSE.ORG
www.eclipse.org/eclipsecon2005/eclipsecon.html | Feb. 28-March 3 |
| Embedded Systems Conference
San Francisco
CMP MEDIA
www.esconline.com/sf/index.htm | March 6-10 |
| Developer Relations Conference
San Jose
EVANS DATA
www.evansdata.com/drc | March 7-8 |
| Software Engineering Process Group Conference
Seattle
CARNEGIE MELLON UNIVERSITY
SOFTWARE ENGINEERING INSTITUTE
www.sei.cmu.edu/sepg | March 7-10 |
| Game Developers Conference
San Francisco
CMP MEDIA
www.gdconf.com | March 7-11 |
| Software Development Conference & Expo
Santa Clara
CMP MEDIA
www.sdexpo.com | March 14-18 |
| Software Security Summit
San Diego
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www.s-3con.com | April 12-14 |

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar. Information is subject to change. Send news about upcoming events to events@bzmedia.com.

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